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ANALYSES AND ENERGY VALUES OF FOODS

BY

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FOREWORD.

An authoritative series of analyses of the commoner foodstuffs, such as are sold and consumed in this country, has long been required. It is true that a large amount of data is already in existence but this refers, for the most part, to foodstuffs consumed in other countries than our own. The need became urgent during the late war especially when the Army, in common with the other sections of the community, was strictly rationed. Owing to this diversity of values and the lack of a common standard, Captain R. H. A. Plimmer, who is a recognised authority on analytical technique, was directed to make a series of analyses for the use of the Army Medical Authorities. In issuing this report, which has been compiled with exhaustive care and for which great credit is due to Captain Plimmer, it is felt that it may be of value to other branches of His Majesty's Services and form the basis of a common standard of food values.

T. H. J. GOODWIN, *Lt.-General,*
D.G., A.M.S.

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INTRODUCTION.

THE food of the individual consists mainly of the three groups of chemical substances—protein, carbohydrate and fat—as supplied by meat, eggs, fish, bread, fruit, vegetables, &c. Water, salts and the accessory food factors are also necessary. A sufficiency of salts is generally present in the ordinary mixed diet, and extra sodium chloride is added according to taste.

The energy value of the food can be ascertained by the direct method of combustion. The total fuel value as so obtained is erroneous physiologically, since this method includes in its results those parts of the food, such as cellulose or fibre, which are not digestible and utilisable by the human organism. More accurate physiological energy values of the food result from its calculation from the chemical composition of the food-stuffs, especially if the proper factors (see below) be used. Hence the chemical composition of the food becomes the basis of its energy value.

Very little attention has been paid in this country to the chemical composition and energy value of foodstuffs. We have the valuable books by Tibbles, Hutchison and other authors on foods and dietetics ; also the useful summary by McKillop on food values ; but the majority of the food analyses are by foreign workers. The British chemists have, however, made numerous analyses, but their data are scattered over various journals and are not readily available for reference. Most of the chemical analyses quoted in text-books on foods, dietetics and physiology are those of Atwater and Bryant. Their Bulletin, No. 28 of the U.S. Department of Agriculture, corrected 14th April, 1906, on the Chemical Composition of American Food Materials, is an unique compendium of analyses and energy values. Numerous analyses of each kind of foodstuff were made, so that a proper average might be given.

It was with the idea that the War Office (and other departments of the Government) should possess a series of data prepared in this country from the food in common use, both home-grown and imported, that Sir W. H. Horrocks directed the following analyses to be carried out. Such a complete set of data as those of Atwater and Bryant could not be obtained by a single worker in the limited period of time available, but in the time so devoted analyses of most foodstuffs have been made ; fewer samples were necessarily taken. The aim has been to arrive at an average for each group of foodstuffs, such as beef from analyses of the various joints, bread from the produce of various bakeries, fish from the group of white fish, &c. In the cases of meat, fish, &c., the joints were separated into fat and skin and lean, flesh and skin, &c., and the proportions determined so as to calculate the whole. Further, the proportions of the joints of the carcase have been ascertained so that the composition of any part and ultimately of the whole animal can be arrived at. (See under meat, poultry, fish, &c.) The analyses are thus not a replica of those of Atwater and Bryant, but may rather be regarded as a supplement.

The analyses number about 900, it is perhaps of interest that the number of weighings involved were over 20,000. Each analysis, in so far as material was available, was carried out in duplicate, and the mean figure is given. This part of the work was carried out single-handed, except for the groups of animal offal, head, pork, &c., and birds ; here the assistance of Mr. A. D. Husband, A.I.C., of the Rowett Research Institute in Animal Nutrition, Aberdeen, was of great value. The preparation of the materials for analysis has been performed under supervision by Sergt. A. Lunn, R.A.M.C., Private P. O. Colville, R.A.M.C., and Sergt. Lowson, R.A.M.C., of the Staff of the Hygiene Department of the Royal Army Medical College, and also of Mr. James Ironside of the above Research Institute, Aberdeen. Without their help and interest in this work it would have been difficult to accomplish the scheme attempted.

ANALYSES AND ENERGY VALUES OF FOODS.

METHODS.

The methods which have been used throughout this series of determinations have been those in general use and described in the various text-books of biochemistry, or physiological chemistry, and of food analysis. Modifications, if any, have consisted usually in some slight simplification of the ordinary procedure, so as to ensure as rapid an analysis as possible.

1. *Determination of Water and Ash.*

The usual procedure was adopted. In those cases in which sodium chloride estimations (excepting fresh meat, fresh fish, &c.) were required, the ash was dissolved in dilute nitric acid and the chloride estimated by Volhard's method. On deducting this quantity there remains "other ash." Detailed analyses of the ash were not made.

2. *Determination of Sodium Chloride.*

The determination of sodium chloride in foodstuffs cannot be effected by incineration and further analysis as described above, since, on ashing these substances, sodium chloride is volatilised.

The chlorides are most conveniently estimated by soaking a weighed quantity of the finely minced material (1–2 gm.) in distilled water in a 100 or 200 c.c. measuring flask for about 12–18 hours. The chlorides diffuse out of the tissue in this time, the volume is made up to the mark, the mixture well shaken and filtered into a dry vessel. The chlorides are estimated in a known volume of the filtrate by Volhard's method. The chloride is calculated as sodium chloride.

3. *Determination of Acidity.*

Acidity was estimated in meat, fruits and some other foodstuffs. The data so obtained are not in all cases given in the following tables. It is customary to return acidity figures as lactic acid in the case of meat, as malic acid in the case of fruits. The acidity of meats is most probably due to acid phosphates, and its amount is usually very small. The acidity of fruits is variable, and the data are interesting. The acidity was estimated by soaking a weighed quantity of material in water and sometimes titrating directly, using phenolphthalein as indicator ; in other cases, after making up to a volume and filtering.

4. *Determination of Protein.*

Proteins may be estimated by difference in certain cases. They are most commonly estimated by calculations from the amount of nitrogen as determined by Kjeldahl's method.

Protein has been estimated here by calculation from the amount of nitrogen. In carrying out the Kjeldahl method, it has sufficed to heat the material with conc. sulphuric acid (20–25 c.c.) and about 0·25 gm. of copper sulphate. It was not necessary to add potassium sulphate. The oxidation was generally finished in two to three hours, except in those cases in which the material contained a great deal of fat.

Fats and very fatty materials were effectively and rapidly analysed for their nitrogen content by oxidising the residue remaining from the ether extract of the fat estimation.

Calculation of the Amount of Protein. The Protein Factor.

The amount of protein in foodstuffs is ascertained from the amount of nitrogen by multiplying it by the factor 6·25. This factor is derived from the assumption that all proteins contain 16 per cent. of nitrogen, *i.e.* $\frac{100}{16}$.

This figure is correct, or nearly correct, for the proteins of the muscular tissues of animals, birds, fishes, but it is not correct for proteins of other sources. Thus, caseinogen, the chief protein of milk, contains 15·67 per cent. of nitrogen, and the correct factor is 6·38. This factor is now most frequently used for the proteins of milk. It is used here for the proteins of milk and its derivatives, such as cheese.

The 6·25 factor is erroneous for the proteins of eggs, both white and yolk (see under eggs).

Vegetable proteins contain more nitrogen than animal proteins; their nitrogen content varies from 16·38 to 18·73 per cent. It has been suggested that different factors be used for different vegetable proteins, *e.g.* 6 for barley, maize, &c., 5·7 for wheat, rye, &c., 5·5 for cottonseed, nuts, &c., but the suggestion has never been adopted. The 6·25 factor is, at any rate, too high; 5·68 is sometimes used for wheat.

Throughout this series of calculations the factor 5·68 has been used in calculating protein in materials of vegetable origin.

On the Presence of Nitrogenous Substances other than Protein.

Nitrogenous substances other than proteins are present in the tissues of animals and plants. Alkaloids do not come into consideration in the ordinary foodstuffs. These nitrogenous constituents are generally considered to be waste products, not utilisable by the animal.

Detailed chemical analyses (by isolation of the compounds) has shown that creatine, purine and other bases are present in muscular tissue, creatine to the amount of about 0·5 per cent.

the purine and other bases in still smaller amounts. Urea and amino acids are also present. The amino acids are the constituents of protein, produced in the ordinary course of digestion for the assimilation of protein.

Plant tissues have been found to contain asparagine, glutamine and various amino acids. The two amides, rather than aspartic and glutamic acids, are the real constituents of protein. Hence in the case of plant tissues the greater part, if not all, of the nitrogenous substances are the equivalent of protein; they are, in fact, assimilable protein. Usually these plant substances are arbitrarily excluded, instead of being included; the animal substances are included, instead of being excluded. It is doubtful if creatine is assimilated; the purine bases are not assimilated, but excreted. Sheep, cattle, &c., synthesise creatine from plant food; perhaps man has the same power of synthesis. Total nitrogen has therefore been regarded as entirely protein in this series of analyses and no deductions made. Deductions may in the future be necessary for the animal extractives only, as creatine and the bases are frequently termed.

5. *Determination of* "*Fat*" (*Ether Extract*).

This determination was invariably carried out by Soxhlet's method, using ether as solvent. No other method is possible in a long series of routine analyses.

It was found convenient and expeditious to allow the *dried* material for extraction to stand in ether during the night and to proceed next day with the continuous extraction. With a small electric hot plate at least six determinations can be made at the same time; such hot plates afford also other advantages.

6. *Determination of Carbohydrate.*

The small amount of carbohydrate present in animal tissues is negligible. The polysaccharide, glycogen, is known to be present in the liver and heart under almost all normal conditions. The estimation by Pflüger's method is too long for routine practice. The amount of glycogen is given fairly accurately by difference; only lactose in milk is generally estimated separately.

The carbohydrates in vegetable foodstuffs are most commonly glucose, fructose, cane sugar, maltose, starch.

The two monosaccharides have been determined together as "glucose" in the case of fruits. Reducing sugar of this type, probably maltose, was determined in bread. Cane sugar was determined in fruits. The procedure adopted was to soak the desired weighed quantity of material, in presence of 1 per cent. of toluene, in water in a measuring flask for 12 to 18 hours, complete the volume, mix, filter and determine the reducing sugar by Fehling's volumetric method. Cane sugar was subsequently estimated in another portion of the filtrate after hydrolysis with dilute sulphuric acid; its amount was represented by the increase in reducing power multiplied by 47/50.

There is no satisfactory method for the routine determination of starch. Its amount is usually represented by difference.

7. *Determination of Fibre or Cellulose.*

The amount of fibre has been estimated by the usual method; 2 per cent. acid and 2 per cent. alkali were used (see Voelcker, "Analyst," 1918, **43**, 31).

8. *General Results of Analyses.*

In all cases where sufficiency of material was available the analyses have been performed in duplicate. The mean of the duplicate figures is given in the following tables.

Frequently the duplicates have not been as close as desired; this applies most particularly to the analyses of meat and similar foodstuffs. It is fairly attributed to the difficulty of preparing perfectly homogeneous samples; it is not possible to reduce meat, &c., to such a fine state of division by means of a small mincer so that an even sample always results. The case is similar with those vegetables which are tough. Hence the analytical data have not been returned to more than one place of decimals. The small loss of moisture which occurs in weighing out the samples is another factor to be considered.

9. *Energy Values.*

The energy value of the foodstuffs has been calculated from the analyses of protein, carbohydrate, fat by multiplication with the usual physiological factors, namely, 4·1, 4·1, 9·3 respectively. These factors are the mean of those obtained on a number of foods.

Other factors have been put forward, but not yet adopted. They are suggested so as to make allowance for the digestibility of the foodstuffs. The digestibility of mixed foods is so variable that it is difficult to decide upon suitable other factors. If required, it is better to deduct say one-tenth from the total, if digestibility is taken into consideration. A fuller study of the "biological value of various foods" is really necessary before a change in the above figures is made.

MEAT.

BEEF, VEAL, MUTTON, LAMB, PORK.

Any figure for the food value of the flesh of the ox, sheep and pig can only be an approximate one, because the flesh varies according to the "fatness" of the animal at the time of its use for food. The deposition of the fat is not the same over the whole body, so that the joints of the carcase, as usually purchased, will have different values, *e.g.*, back and leg. A more accurate food value would be given by the analysis of a whole or half carcase, but such a quantity of material is too great for manipulation in a small laboratory. The small purchaser requires the comparative data of the different joints; the large purchaser wishes to know the value of the carcase as a whole. Hence, to satisfy the needs of both, and to get some representative food value, the plan adopted was the following:—

Sections representing fair samples of the whole joint, and weighing from ½ to 1 lb., were procured from all the joints as usually cut. On account of the variation in the fat content, the fat and skin were separated from the lean, and the proportions of each determined by weighing. The parts were then separately analysed. From the proportions of fat and lean the figures can easily be calculated for the whole section. With the knowledge of the separate analytical data for lean and for fat and skin, the value for any other proportion than the one here examined can be calculated in the same way. This scheme of calculation from the separate parts assumes that lean and fat and skin have always the same composition. The assumption requires numerous analyses of the lean of fat and thin animals.

A rough value for the carcase can be deduced from these figures.

The correct value for the carcase is only obtainable by knowing the weights of all the joints into which the carcase is cut, since the joints as cut have very different weights.

The amount of bone in these sections is not representative of the bone in the whole carcase, but it is known that the bone of an animal is about 20 per cent. of its weight. A deduction of one-fifth can therefore be made for the whole carcase.

The amount of bone in the section of the joint as used here was not a true proportion, since it was only desired to have a fair section of the fleshy portion.

The quantity of bone in the forequarters of beef was ascertained from Captain C. M. Wills, R.A.S.C. The flesh of the forequarters was used for making sausages, and was separated from the bone for this purpose. As seen from the figures below, there is 17½ per cent. of bone in the forequarter. A sample of the mixed meat was also supplied for analysis; the analytical data of this meat are very near the analytical data which have been calculated for the whole forequarter.

A similar proportion of bone has been assumed for the hindquarter.

The suet (kidney fat), kidneys and thin skirt or diaphragm are generally left in the carcase of the animal, although they are sold separately. They are excluded from the data of the carcase, but included in the data of offal.

The head, tail and other parts of the animal are also used for food. Either the whole or half of these parts was procured. They were prepared for analysis in the same way as the sections of the joints, *i.e.*, meat, fat and bone were separated, their proportions determined, and the separate parts analysed.

The various parts of the offal were also analysed, after separation, if necessary, into fat and lean.

The weights of the joints in the various carcases, the weight of head, tail, &c., and of each organ in the offal, have been ascertained through the kind help of Mr. A. Aiken of Aberdeen; and, further, he made arrangements for determining the live weights of the animals before slaughter, and the weights of each part of the animals after slaughter. With these data it is possible to calculate the food value of the carcase, head, tail, whole of offal and ultimately of the live weights of the animals. The data so collected enable a comparison being made of the food value of the ox, sheep and pig, both of live weights, carcase, offal, &c. As stated above, the food value depends on the "fatness" of the animal.

The animal with the highest food value is the pig, in spite of the comparatively lean nature of the parts here obtained for analyses. The sheep has the next best food value, very close to that of the pig; but here it must be remembered that the sheep was very fat and the average figure is likely to be lower. The average value of mutton is probably nearer the figure as now obtained for the ox.

These data represent only the food value; the commercial value of the animals will also depend upon the value of the skin, tallow fat and other parts of the waste.

The various data are given in the following order:—

(1) Proportions of parts in live animal, carcase, head, tail, offal, &c.; fat and skin and lean in sections of joints, heart and other parts of offal.
(2) Analytical data and corresponding energy values.
(3) Analytical data calculated for parts in sections of joints, offal, tongue, head, tail, carcase, whole animal.

Note on the Food Value of Meat.

The proper basis of the food value of meat should be of the lean. This part of the meat is eaten by all people, and it suffers very little loss during cooking. The amount of fat in meat is diminished during cooking, and, further, individual taste may discard the whole or part of it. The fat content is thus indeterminate for the individual, and it is not possible to give a figure for the energy value of meat as eaten. A minimum calorie value is that of the lean.

By the ordinary routine method of analysis no discrimination is made between the flesh of the different animals. Modern biochemistry is beginning to insist upon the nature of the amino acid content of the protein, *i.e.*, upon the *quality* of the protein. It is not known whether the meat of different animals has the same composition in amino acids, nor is it known whether forequarter meat differs from hindquarter meat, or the meat of young and old animals. The eye and palate can detect the poorer qualities of meat. These contain more gristle and elastic tissue ; it is known that the protein of elastic tissue differs from other proteins in composition. The quality of such a protein and also gelatin is not so good physiologically as that of muscle protein.

Biochemical methods are not sufficiently advanced for determining all the amino acids in proteins, but a certain number can be determined with fair accuracy. Such analyses are very lengthy and not suitable for the routine analyses which gives the energy value. Analyses of this nature are being carried out in connection with research on animal nutrition. These data will give a better index of the real food value of meat.

BEEF.

The joints of the carcase, as it is usually cut for consumption consisted of frozen Argentine beef as supplied for Army use in 1917. This beef was of first-rate quality, very similar to prime Scotch beef; it differs mainly in flavour.

The offal was derived from recently slaughtered cattle. Except the tripe, these organs were exactly in the same condition as on removal from the animal. The tripe, stomach (rumen and reticulum) and tripe-head (omasum) were cleaned and as sold for consumption; the yearning (abomasum) and gussie (rectum) were not thus prepared, but the food residues and adhering fat were removed before analysis. Only the muscular coat of the gullet is edible matter, and allowance was made for the interior waste. The organs, such as the heart, were separated from adhering fat, but each was analysed and the value for the whole organ as present in the body was calculated.

Analyses of tallow fat, the fat of the abdomen adhering to the intestines, and of the testis were also made. These parts are not usually consumed, and these data are not included in the final calculations.

The head, tongue and tail were again taken from different animals recently slaughtered. Half a head was obtained and separated into bone, meat, &c., for analysis.

The tongue was also separated into its various parts. The tail was separated into its lean and fat, the remainder was boiled and the extract analysed.

OX.

PROPORTIONS OF PARTS.

Live Animal.

	Lb.	Per-centage.
Carcase	467	53·0
Head	19	2·2
Offal	76·25	8·6
Tail	1·75	0·2
Tongue	8	0·9
	572·0	64·9
Waste—		
Blood	19	
Fat (Tallow)	38	
Feet (4)	14	
Hide	59	
Intestines	24	
	154	17·4
Loss—		
Blood, food residues and water on evaporation	156	17·7
Total	882	100·0

Half Carcase.

	Lb.	Per-centage.
Forequarter	142	54·2
Hindquarter	120	45·8
Total	262	100·0

Forequarter Joints.

	Lb.	Per-centage.
Brisket	14	9·9
Chuck	38	26·8
Clod (fat)	2	1·4
Fore rib	19	13·4
Middle rib	13	9·1
Shin	9	6·3
Shoulder	43	30·3
Sticking	4	2·8
Total	142	100·0

PROPORTIONS OF PARTS—*continued.*

Hindquarter Joints.

	Lb.	Percentage.
Fillet	5	4·2
Flank (thin)	14	11·7
Leg	16	13·3
Rump steak	14	11·7
Silverside	26	21·7
Sirloin	30	25·0
Topside	15	12·5
Total	120	100·1

Offal.

Diaphragm—		
Thick skirt	1·25	1·6
Thin skirt	1·00	1·3
Gullet	0·50	0·7
Heart	3·50	4·6
Kidneys	1·50	2·0
Liver	10·00	13·1
Lungs	5·00	6·7
Spleen	0·50	0·6
Suet	18·00	23·6
Trachea	0·50	0·7
Tripe—		
Omasum or head	8·00	10·5
Rumen or stomach	18·00	23·6
Abomasum or yearning	2·25	3·0
Rectum	4·75	6·2
Heartbread or kernel	0·50	0·6
Pancreas or collop	0·50	0·6
Thymus or sweetbread	0·50	0·6
Total	76·25	100·0

Head.

	Lb.	Percentage.
Bone	13	54·2
Brain	1	4·2
Cheeks (2)	10	41·6
Total	24	100·0

1 *Cheek.*

Bone	0·5	14·3
Fat	1·5	42·9
Lean	1·5	42·9
Total	3·5	100·1

Tail.

Bone	0·5	29·4
Fat	0·3	17·7
Lean	0·9	52·9
Total	1·7	100·0

Tongue.

Cartilage	0·1	1·4
Root	4·8	64·9
Sublingual gland	0·1	1·4
Tongue proper	2·0	27·0
Skin	0·4	5·4
Total	7·4	100·1

PROPORTIONS OF FAT AND LEAN IN SECTIONS OF FOREQUARTER JOINTS.

Brisket.

	Gm.	Percentage.
(1) Fat and skin	165	50·8
Lean	160	49·3
Total	325	100·1
(2) Fat and skin	128	28·6
Lean	320	71·4
	448	100·0

Fore Rib.

Fat and skin	90	30·5
Lean	205	69·5
Total	295	100·0

Shoulder.

	Gm.	Percentage.
Fat and skin	25	13·5
Lean	160	86·5
Total	185	100·0

Sticking.

Fat and skin	145	37·5
Lean	242	62·5
Total	387	100·0

Proportions of Fat and Lean in Sections of Hindquarter Joints.

Fillet.

	Gm.	Percentage.
Fat and skin ...	61	33·3
Lean	122	66·7
Total	183	100·0

Rump steak.

	Gm.	Percentage.
Fat and skin ...	100	43·3
Lean	131	56·8
Total	231	100·1

Topside.

	Gm.	Percentage.
Fat and skin ...	57	36·3
Lean	100	63·7
Total	157	100·0

Flank (thin).

	Gm.	Percentage.
Bone	29	8·0
Fat and skin ...	217	59·6
Lean	118	32·4
Total	364	100·0

Silverside.

	Gm.	Percentage.
Fat and skin ...	34	15·6
Lean	184	84·4
Total	218	100·0

Leg.

	Gm.	Percentage.
Fat and skin ...	65	23·0
Gristle	21	7·4
Lean	197	69·6
Total	283	100·0

Sirloin.

	Gm.	Percentage.
(1) Fat and skin ...	48	29·1
Lean	117	70·9
Total	165	100·0
(2) Fat and skin ...	75	33·8
Lean	147	66·2
Total	222	100·0

Proportion of Bone in Forequarter.

No. of Carcases.	Lbs.	Bones.		Bones.	
		Marrow.	Small.	Marrow.	Small.
		Lbs.	Lbs.	Percentage.	Percentage
1,316	245,004	12,218	31,333		
1,409	262,260	13,047	32,715		
1,638	302,021	14,980	37,779		
4,363	809,285	40,245	101,827	5	12·5
				17·5	

PROPORTIONS OF LEAN AND FAT IN OFFAL.

Heart.

	Gm.	Percentage.
Lean	56	53·3
Fat	49	46·7
Total	105	100·0

Heartbread.

Lean	140	46·7
Fat	160	53·3
Total	300	100·0

Testis.

Interior	260	67·2
Skin, &c.	127	32·8
Total	387	100·0

Gullet.

Internal waste ...	121	30·6
Muscular coat ...	274	69·4
Total	395	100·0

Pancreas.

Lean	364	71·0
Fat, &c.	148	29·0
Total	512	100·0

Tripe. Rumen.

	Lbs.	Percentage.
Glandular portion	7·5	66·7
Honeycomb portion (Reticulum) ...	0·75	6·7
Non-glandular portion	1·00	8·9
Muscular portion ...	2·00	17·8
Total	11·25	100·1

Abomasum.

	Gm.	
Edible	309	32·6
Fat	498	52·5
Waste	141	14·9
Total	948	100·0

Rectum.

Edible	1,289	65·2
Fat	539	27·3
Waste	148	7·5
Total	1,976	100·0

BEEF.

Analytical Data of Fat and Skin and Lean in Sections of Forequarter Joints.

—	Water.	Ash.	Sodium Chloride.	Protein.	Carbo-hydrate.	Fat.	Total.	Energy Value. Calories per—		
								100 gm.	1 oz.	1 lb.
Brisket—										
(1) Fat and skin	22·1	0·3	—	9·5	—	65·7	97·6	650·0	184·3	2,948·4
Lean	61·2	0·8	0·1	18·2	—	19·2	99·5	253·2	71·8	1,148·5
(2) Fat and skin	35·4	0·5	—	10·6	—	53·3	99·8	539·2	152·9	2,445·8
Lean	69·5	1·1	0·3	20·4	—	8·2	99·5	159·9	45·3	725·3
Chuck	70·5	1·1	0·1	21·7	—	6·5	99·9	149·4	42·4	677·7
Clod (fat)	10·5	0·2	—	2·7	—	86·9	100·3	819·2	232·2	3,715·9
Fore rib—										
(1) Whole	54·4	0·8	0·1	17·6	—	26·1	99·0	314·9	89·3	1,428·4
(2) Fat and skin	15·3	0·4	—	4·3	—	79·4	99·4	756·1	214·4	3,429·7
Lean	68·0	0·9	0·2	20·0	—	9·9	99·0	174·1	49·4	789·7
Middle rib	63·0	0·9	0·1	20·0	—	16·5	100·5	235·5	66·8	1,068·2
Shin (1)	71·7	1·0	0·2	23·1	—	4·6	100·6	137·5	39·0	623·7
(2)	69·8	1·0	0·2	23·1	—	5·0	99·1	141·2	40·0	640·5
Shoulder—										
Fat and skin	18·3	0·3	—	4·8	—	77·4	100·8	739·5	209·7	3,354·4
Lean	71·0	1·1	0·1	20·2	—	7·1	99·5	148·9	42·2	675·4
Sticking—										
Fat and skin	21·7	0·3	—	9·4	—	67·7	99·1	668·2	189·4	3,031·0
Lean	72·5	1·1	—	21·2	—	4·4	99·2	127·8	36·2	579·7
Sausage Meat—										
(1)	55·8	0·8	0·1	16·3	—	26·4	99·5	312·4	88·6	1,417·1
(2)	53·1	0·8	0·2	16·3	—	30·6	101·0	351·4	99·6	1,594·0
Mean	54·4	0·8	0·1	16·3	—	28·5	100·2	331·9	94·1	1,505·6

BEEF.

ANALYTICAL DATA OF FAT AND SKIN AND LEAN IN SECTIONS OF HINDQUARTER JOINTS.

—	Water.	Ash.	Sodium Chloride.	Protein.	Carbo-hydrate.	Fat.	Total.	Energy value. Calories per—		
								100 gm.	1 oz.	1 lb.
Fillet—										
Fat and skin	12·5	0·2	—	3·9	—	83·4	100·0	791·6	224·4	3,590·7
Lean	65·4	1·0	0·1	20·4	—	12·8	99·7	202·7	57·5	919·5
Flank (thin)—										
Fat and skin	13·2	0·3	—	4·1	—	82·6	100·2	785·0	222·5	3,560·8
Lean	64·2	1·0	0·1	19·5	—	15·1	99·9	220·4	62·5	999·7
Leg—										
Fat and skin	43·2	2·2	—	31·9	—	21·6	98·9	331·7	94·0	1,504·6
Lean	70·1	0·9	0·1	21·7	—	7·3	100·1	156·9	44·5	711·7
Rump steak—										
Fat and skin	10·7	0·3	—	2·9	—	86·3	100·2	814·5	230·9	3,694·6
Lean	69·2	1·2	0·1	21·9	—	7·3	99·7	157·7	44·7	715·3
Silverside—										
Fat and skin	19·5	0·4	—	8·7	—	71·3	99·9	698·8	198·1	3,169·8
Lean	71·6	1·2	0·1	22·1	—	4·9	99·9	136·2	38·6	617·8
Sirloin—										
(1) Fat and skin	10·4	0·1	—	5·3	—	84·8	100·6	810·4	57·4	3,676·0
Lean	69·1	0·9	0·1	21·2	—	9·0	100·3	170·6	48·4	773·8
(2) Fat and skin...	10·7	0·2	—	4·5	—	84·4	99·8	803·4	227·8	3,644·2
Lean	66·9	0·8	0·1	21·5	—	10·1	99·4	182·1	51·6	826·0
Topside—										
Fat and skin	11·1	0·2	—	4·1	—	84·7	100·1	804·5	228·1	3,649·2
Lean	71·5	1·1	0·1	22·5	—	4·6	99·8	135·0	38·3	612·4

BEEF.

ANALYTICAL DATA OF PARTS OF HEAD AND TAIL.

—	Water.	Ash.	Sodium Chloride.	Protein.	Carbo-hydrate.	Fat.	Total.	Energy Value. Calories per—		
								100 gm.	1 oz.	1 lb.
Head—										
Brain	78·0	1·2	0·1	11·0	—	10·0	100·3	138·1	39·2	626·4
Cheek, fat and skin	50·0	0·7	0·1	13·6	—	35·7	100·1	387·8	109·9	1,759·1
,, lean	73·0	1·2	0·3	20·4	—	5·5	100·4	134·8	38·2	611·4
Tongue—										
Centre	64·8	0·9	0·1	15·6	—	19·2	100·6	242·5	68·8	1,100·0
Root	38·0	0·5	—	9·4	—	50·8	98·7	511·0	144·9	2,317·9
Sublingual glands	71·0	1·1	0·0	17·3	—	7·5	96·9	140·7	39·9	638·2
Skin	66·9	1·1	0·8	24·8	—	7·0	100·6	166·8	47·3	756·6
Tail—										
Bone extract	—	—	—	8·4	—	13·4	to 100	159·1	43·9	701·7
Fat	14·2	0·2	—	6·8	—	79·0	100·2	762·6	216·2	3,459·2
Lean	64·6	1·0	0·1	22·2	—	13·5	101·4	216·6	60·2	962·5

BEEF.

ANALYTICAL DATA OF OFFAL.

—	Water.	Ash.	Sodium Chloride.	Protein.	Carbo-hydrate. By diff.	Fat.	Total.	Energy Value. Calories per—		
								100 gm.	1 oz.	1 lb.
Diaphragm—										
Back vein or thick skirt	60·2	0·9	—	18·5	—	19·7	99·3	259·1	73·5	1,175·3
Thin skirt	56·0	0·8	—	17·9	—	25·3	100·0	308·7	87·5	1,400·3
Gullet (muscular coat)	73·0	1·0	—	18·0	—	6·8	98·8	137·0	38·8	621·4
Heart, fat	9·5	0·2	0·1	5·7	—	84·0	99·5	804·6	228·1	3,649·7
,, lean	75·2	1·2	0·1	19·7	0·9	2·9	100·0	111·4	31·6	505·3
Kidney	76·3	1·3	0·5	18·1	—	2·6	98·8	98·4	27·9	446·3
Liver	70·8	1·6	0·1	19·9	4·4	3·2	100·0	129·4	36·7	587·0
Lung	79·0	0·9	0·1	17·8	—	1·7	99·5	88·8	25·2	402·8
Spleen	77·4	1·5	0·1	18·1	—	2·3	99·4	95·6	27·1	433·6
Suet	5·9	0·2	—	1·2	—	93·3	100·6	872·6	247·4	3,958·1
Tallow fat	20·6	0·4	—	2·4	—	74·7	98·1	704·6	199·8	3,196·1
Trachea	65·8	2·0	—	21·6	—	9·0	98·4	172·3	48·8	781·6
Tripe—										
Stomach, or rumen, glandular portion	82·5	0·2	—	14·8	—	2·0	99·5	79·3	22·5	359·7
,, honeycomb, do.	82·0	0·2	—	14·4	—	2·9	99·5	86·0	24·4	390·1
,, non-glandular, do.	81·2	0·2	—	15·2	—	2·4	99·0	84·6	24·0	383·8
,, muscular do.	76·4	0·4	—	20·0	—	2·2	99·0	102·5	29·1	464·9
,, fat (waste)	34·9	0·1	—	3·9	—	61·2	99·1	585·2	165·9	2,654·5
Head or omasum	91·8	0·1	—	7·7	—	0·3	99·9	34·4	9·8	156·0
Abomasum	80·4	1·0	—	15·3	—	3·0	99·7	90·6	25·7	411·0
Rectum	65·4	0·9	—	10·4	—	23·6	100·3	262·1	74·3	1,188·9
Heartbread or kernel, fat	17·7	0·5	0·1	5·0	—	76·4	99·7	731·0	207·2	3,315·8
,, ,, lean	51·6	1·4	0·2	11·0	—	35·5	99·7	375·3	106·4	1,702·4
Pancreas or collop, fat	29·0	0·5	0·1	7·0	—	60·0	96·6	586·7	166·3	2,661·3
,, ,, lean	73·0	1·8	0·2	17·6	—	7·3	99·9	140·1	39·7	635·5
Thymus or sweetbread	70·8	1·8	0·1	17·0	—	11·0	100·7	172·0	48·8	780·2
Testis, internal portion	84·7	1·2	0·2	11·4	—	1·6	99·1	61·6	17·5	279·4
,, skin, &c.	62·0	0·9	0·2	20·0	—	15·0	98·1	221·5	62·8	1,004·7

BEEF.

ANALYTICAL DATA OF FAT AND SKIN AND LEAN IN FOREQUARTER JOINTS CALCULATED ACCORDING TO PROPORTIONS.

—	Per-centage Amount.	Water.	Ash.	Sodium Chloride.	Protein.	Carbo-hydrate.	Fat.	Energy Value. Calories per—		
								100 gm.	1 oz.	1 lb.
Brisket—										
(1) Fat and skin	50·8	11·2	0·15	—	4·83	—	33·38			
Lean	49·3	30·2	0·39	0·05	8·97	—	9·47			
Whole	100·1	41·4	0·54	0·05	13·8	—	42·85	455·1	129·0	2,064·3
(2) Fat and skin	28·6	10·1	0·14	—	3·03	—	15·24			
Lean	71·4	49·6	0·79	0·07	14·57	—	5·86			
Whole	100·0	59·7	0·93	0·07	17·6	—	21·1	268·4	76·1	1,217·5
Mean of (1) and (2) whole	—	50·6	0·74	0·06	15·7	—	31·98	361·8	102·6	1,641·1
Chuck (whole)	—	70·5	1·1	0·1	21·7	—	6·5	149·4	42·4	677·7
Fore rib—										
(1) Whole	—	54·4	0·8	0·1	17·6	—	26·1	314·9	89·3	1,428·4
(2) Fat and skin	30·5	4·7	0·12	—	1·31	—	24·21			
Lean	69·5	47·3	0·63	0·14	13·90	—	6·88			
Whole	100·0	52·0	0·75	0·14	15·21	—	31·09	351·5	100·1	1,601·6
Mean of (1) and (2) whole	—	53·2	0·78	0·12	16·41	—	28·59	333·2	94·5	1,511·4

Middle rib	—	63·0	0·9	0·1	20·0	—	16·5	235·5	66·8	1,068·2
Shin (1)	—	71·7	1·0	0·2	23·1	—	4·6	137·5	39·0	623·7
(2)	—	69·8	1·0	0·2	23·1	—	5·0	141·2	40·0	640·5
Mean of (1) and (2) ...	—	70·8	1·0	0·2	23·1	—	4·8	139·4	39·5	632·1
Shoulder—										
Fat and skin	13·5	2·5	0·04	—	0·65	—	10·45			
Lean	86·5	61·4	0·95	0·09	17·47	—	6·14			
Whole	100·0	63·9	0·99	0·09	18·12	—	16·59	228·6	64·8	1,036·9
Sticking—										
Fat and skin	37·5	8·1	0·11	—	3·53	—	25·39			
Lean	62·5	45·3	0·69	—	13·25	—	2·75			
Whole	100·0	53·4	0·8	—	16·78	—	28·14	330·5	93·7	1,499·2

BEEF.

ANALYTICAL DATA OF FAT AND SKIN AND LEAN IN HINDQUARTER JOINTS CALCULATED ACCORDING TO PROPORTIONS.

—	Percentage Amount.	Water.	Ash.	Sodium Chloride.	Protein.	Carbohydrate.	Fat.	Energy Value. Calories per—		
								100 gm.	1 oz.	1 lb.
Clod (fat)	100·0	10·5	0·2	—	2·7	—	86·9	819·2	232·2	3,715·9
Fillet—										
Fat and skin	33·3	4·2	0·07	—	1·30	—	27·77			
Lean	66·7	43·6	0·67	0·07	13·61	—	8·54			
Whole	100·0	47·8	0·74	0·07	14·91	—	36·31	398·8	113·1	1,809·0
Flank (thin)—										
Bone	8·0	—	—	—	—	—	—			
Fat and skin	59·6	7·9	0·18	—	2·44	—	49·23			
Lean	32·4	20·8	0·32	0·03	6·32	—	4·89			
Whole	100·0	28·7	0·50	0·03	8·76	—	54·12	539·2	152·9	2,445·8
Leg—										
Fat and skin	23·0	9·9	0·51	—	7·34	—	4·97			
Gristle	7·4	—	—	—	—	—	—			
Lean	69·6	48·8	0·63	0·07	15·10	—	5·08			
Whole	100·0	58·7	1·14	0·07	22·44	—	10·05	185·5	52·6	841·4
Rump steak—										
Fat and skin	43·3	4·6	0·13	—	1·26	—	37·37			
Lean	56·8	39·3	0·68	0·06	12·44	—	4·15			
Whole	100·1	43·9	0·81	0·06	13·7	—	41·52	442·3	125·4	2,006·3

Silverside—										
Fat and skin	15·6	3·0	0·06	—	1·36	—	11·12			
Lean	84·4	60·4	1·01	0·08	18·65	—	4·14			
Whole	100·0	63·4	1·07	0·08	20·01	—	15·26	224·0	63·5	1,016·1
Sirloin—										
(1) Fat and skin	29·1	3·0	0·03	—	1·54	—	24·68			
Lean	70·9	49·0	0·64	0·07	15·03	—	6·38			
Whole	100·0	52·0	0·67	0·07	16·57	—	31·06	356·8	101·2	1,618·4
(2) Fat and skin	33·8	3·6	0·07	—	1·52	—	28·53			
Lean	66·2	44·3	0·53	0·07	14·23	—	6·69			
Whole	100·0	47·9	0·6	0·07	15·75	—	35·22	392·1	111·2	1,778·6
Mean of (1) and (2) whole	—	50·0	0·64	0·07	16·16	—	33·14	374·5	106·1	1,748·5
Topside—										
Fat and skin	36·3	4·0	0·07	—	1·49	—	30·75			
Lean	63·7	45·6	0·70	0·06	14·33	—	2·93			
Whole...	100·0	49·6	0·77	0·06	15·82	—	33·68	378·1	107·2	1,715·1

BEEF.

Analytical Data of Parts of Offal Calculated according to Proportions.

—	Percentage Amount.	Water.	Ash.	Sodium Chloride.	Protein.	Carbohydrate. By diff.	Fat.	Energy Value. Calories per—		
								100 gm.	1 oz.	1 lb.
Gullet—										
Interior waste	30·6	—	—	—	—	—	—			
Muscular coat	69·4	50·7	0·69	—	12·49	—	4·72			
Whole	100·0	50·7	0·69	—	12·49	—	4·72	95·1	27·0	431·4
Heart—										
Fat	46·7	4·4	0·1	0·09	2·66	—	39·23			
Lean	53·3	40·1	0·6	0·05	10·50	0·48	1·55			
Whole	100·0	44·5	0·7	0·14	13·16	0·48	40·78	435·2	123·4	1,974·1
Heartbread—										
Fat	53·3	9·4	0·3	0·05	2·66	—	40·72			
Lean	46·7	24·1	0·7	0·09	5·14	—	16·58			
Whole	100·0	33·5	1·0	0·14	7·80	—	57·30	564·9	160·2	2,562·4
Pancreas—										
Fat	29·0	8·4	0·1	0·03	0·20	—	17·40			
Lean	71·0	51·8	1·3	0·14	12·50	—	5·18			
Whole	100·0	60·2	1·4	0·17	12·70	—	22·58	262·1	74·3	1,188·9

Testis—										
Interior	67·2	56·9	0·8	0·13	7·66	—	1·08			
Skin, &c....	32·8	20·3	0·3	0·07	6·56	—	4·92			
Whole	100·0	77·2	1·1	0·20	14·22	—	6·00	114·1	32·3	517·6
Tripe—										
Rumen, glandular portion ...	66·7	55·0	0·13	—	9·87	—	1·33			
,, honeycomb portion ...	6·7	5·5	0·01	—	0·97	—	0·19			
,, non-glandular ,, ...	8·9	7·2	0·02	—	1·35	—	0·21			
,, muscular ,, ...	17·8	13·6	0·07	—	3·56	—	0·39			
Whole	100·1	81·3	0·23	—	15·75	—	2·12	84·3	23·9	382·4
Abomasum (edible part) ...	32·6	26·2	0·03	—	4·99	—	0·98			
,, fat and waste ...	67·4	—	—	—	—	—	—			
Whole	100·0	26·2	0·03	—	4·99	—	0·98	29·6	8·4	134·3
Rectum (edible part)	65·2	42·6	0·59	—	6·78	—	15·39			
,, fat and waste ...	34·8	—	—	—	—	—	—			
Whole	100·0	42·6	0·59	—	6·78	—	15·39	170·9	47·8	775·2

BEEF.

ANALYTICAL DATA OF PARTS OF HEAD, TONGUE AND TAIL CALCULATED ACCORDING TO PROPORTIONS.

—	Percentage Amount.	Water.	Ash.	Sodium Chloride.	Protein.	Carbohydrate.	Fat.	Energy Value. Calories per—		
								100 gm.	1 oz.	1 lb.
Cheek—										
Bone	14·3	—	—	—	—	—	—			
Fat	42·9	21·4	0·3	0·04	5·83	—	15·31			
Lean	42·9	31·3	0·5	0·13	8·75	—	2·36			
Whole	100·1	52·4	0·8	0·17	14·58	—	17·67	224·1	63·5	1,016·5
Head—										
Bone	54·2	—	—	—	—	—	—			
Brain	4·2	3·3	0·1	0·00	0·46	—	0·42			
Cheeks	41·6	21·8	0·3	0·07	6·03	—	7·25			
Whole	100·0	25·1	0·4	0·07	6·49	—	7·67	97·9	27·8	444·0
Tongue—										
Cartilage	1·4	—	—	—	—	—	—			
Root	64·9	24·7	0·3	—	6·10	—	32·97			
Sublingual gland	1·4	1·0	0·0	—	0·24	—	0·11			
Tongue proper	27·0	17·5	0·2	0·03	4·21	—	5·18			
,, skin	5·4	3·6	0·1	0·04	1·34	—	0·38			
Whole	100·1	46·8	0·6	0·07	11·89	—	38·64	408·1	115·7	1,851·1
Tail—										
Bone	29·4	—	—	—	2·47	—	3·94			
Fat	17·7	2·5	0·0	—	1·20	—	13·98			
Lean	52·9	34·2	0·5	0·05	11·74	—	7·14			
Whole	100·0	36·7	0·5	0·05	15·41	—	25·06	296·2	84·0	1,343·6

BEEF.

DATA OF JOINTS CALCULATED ACCORDING TO PROPORTIONS IN FOREQUARTER, HINDQUARTER AND HALF CARCASE.

—	Percentage Amount.	Water.	Ash.	Sodium Chloride.	Protein.	Carbohydrate.	Fat.	Energy Value. Calories per—		
								100 gm.	1 oz.	1 lb.
Forequarter—										
Brisket	9·9	5·0	0·07	0·01	1·55	—	3·17			
Chuck	26·8	18·9	0·30	0·03	5·82	—	1·74			
Clod (fat)	1·4	0·2	0·00	—	0·04	—	1·22			
Fore rib	13·4	7·1	0·10	0·02	2·20	—	3·83			
Middle rib	9·1	5·7	0·08	0·01	1·82	—	1·50			
Shin	6·3	4·5	0·06	0·01	1·45	—	1·11			
Shoulder	30·3	19·4	0·30	0·03	5·49	—	5·03			
Sticking	2·8	1·5	0·02	—	0·47	—	0·79			
Whole	100·0	62·3	0·93	0·11	18·84	—	18·39	248·3	70·4	1,126·3
Hindquarter—										
Fillet	4·2	2·0	0·03	0·00	0·63	—	1·52			
Flank (thin)	11·7	3·4	0·06	0·00	1·02	—	6·33			
Leg	13·3	7·8	0·15	0·01	2·99	—	1·34			
Rump steak	11·7	5·1	0·09	0·01	1·60	—	4·86			
Silverside	21·7	13·8	0·23	0·02	4·34	—	3·31			
Sirloin	25·0	12·5	0·16	0·01	4·04	—	8·29			
Topside	12·5	6·2	0·10	0·01	1·98	—	4·21			
Whole	100·1	50·8	0·82	0·06	16·60	—	29·86	345·8	98·0	1,568·6
Half Carcase—										
Forequarter	54·2	33·8	0·50	0·06	10·21	—	9·97			
Hindquarter	45·8	23·3	0·38	0·03	7·60	—	13·68			
Whole	100·0	57·1	0·88	0·09	17·81	—	23·65	293·0	83·1	1,329·0
„ Less 17½ per cent. for bone	—	47·1	0·73	0·07	14·69	—	19·51	241·7	68·6	1,096·4

BEEF.

DATA OF OFFAL CALCULATED ACCORDING TO PROPORTIONS OF WHOLE.

—	Percentage Amount.	Water.	Ash.	Sodium Chloride.	Protein.	Carbohydrate.	Fat.	Energy Value. Calories per— 100 gm.	1 oz.	1 lb.
Diaphragm—Thick skirt	1·6	1·0	0·01	—	0·30	—	0·31			
,, Thin skirt	1·3	0·7	0·01	—	0·23	—	0·33			
Gullet	0·7	0·4	0·01	—	0·09	—	0·03			
Heart	4·6	2·1	0·03	0·01	0·61	0·02	1·88			
Kidneys	2·0	1·5	0·03	0·01	0·36	—	0·05			
Liver	13·1	9·3	0·21	0·01	2·61	0·58	0·42			
Lungs	6·7	5·3	0·06	0·01	1·19	—	0·11			
Spleen	0·6	0·5	0·01	0·00	0·11	—	0·01			
Suet	23·6	1·4	0·05	—	0·28	—	22·02			
Trachea	0·7	0·5	0·01	—	0·15	—	0·06			
Tripe—Omasum (head)	10·5	9·6	0·00	—	0·81	—	0·03			
,, Rumen (stomach) ...	23·6	19·2	0·05	—	3·72	—	0·50			
,, Abomasum (yearning) ...	3·0	0·8	0·00	—	0·15	—	0·03			
,, Rectum (gussie)	6·2	2·6	0·04	—	0·42	—	0·95			
Heartbread (kernel)	0·6	0·2	0·01	0·00	0·05	—	0·34			
Pancreas (collop)	0·6	0·4	0·01	0·00	0·08	—	0·13			
Thymus (sweetbread)	0·6	0·4	0·01	0·00	0·10	—	0·07			
Whole offal	100·0	55·9	0·55	0·04	11·26	0·60	27·27	302·2	85·7	1,370·8

BEEF.

DATA CALCULATED ACCORDING TO PROPORTIONS IN THE WHOLE ANIMAL.

—	Per-centage Amount.	Water.	Ash.	Sodium Chloride.	Protein.	Carbo-hydrate.	Fat.	Energy Value. Calories per—		
								100 gm.	1 oz.	1 lb.
Carcase	53·0	25·0	0·39	0·04	7·79	—	10·34			
Head	2·2	0·6	0·01	0·00	0·14	—	0·17			
Offal	8·6	4·8	0·05	0·00	0·97	0·05	0·34			
Tail	0·2	0·1	0·00	0·00	0·03	—	0·05			
Tongue	0·9	0·4	0·01	0·00	0·11	—	0·35			
Waste	17·4	—	—	—	—	—	—			
Loss	17·7	—	—	—	—	—	—			
Whole ox (live)	100·0	30·9	0·46	0·04	9·04	0·05	13·25	160·5	45·5	728·0

VEAL.

The various parts of the calf were all obtained from recently killed animals, but they were not derived from the same animal. The whole procedure adopted was similar to that with the ox. The main difference between the ox and calf, as used for food, is that fewer joints are cut from the carcase and the foot is generally eaten. The tongue is not separated from the head.

In carrying out the analyses of the head and foot, the bone was ultimately extracted with boiling water and the extract analysed. The tail was boiled in water before analysis, the meat then removed and analysed, and subsequently the extract which, on cooling, solidified to a jelly.

Veal chiefly differs from beef in containing less fat in the muscular tissue ; the difference in the lean is not shown by the ordinary chemical analysis.

CALF.

PROPORTIONS OF PARTS.

Live Animal.	Lb.	Percentage.
Carcase	91·80	50·4
Head	10·75	5·9
Offal	14·75	8·1
Tail	0·25	0·1
	117·55	64·5
Waste—		
Blood	6·00	
Fat (tallow) ...	1·00	
Feet	5·00	
Hide	8·00	
Intestines ...	4·25	
	24·25	13·3
Loss—		
Blood, food residues, and water on evaporation	40·20	22·1
Total ...	182·00	99·9

Half Carcase.		
Forequarter ...	18·6	40·5
Hindquarter ...	18·8	41·0
Loin	8·5	18·5
Total ...	45·9	100·0

Forequarter.	Gm.	
Bone	60	16·1
Meat	312	83·9
Total ...	372	100·0

Offal.	Oz.	Percentage.
Diaphragm—		
Thick skirt ...	6	2·5
Thin skirt ...	7	3·0
Gullet	4	1·7
Heart	21	8·9
Kidneys	11	4·7
Liver	50	21·2
Lungs	32	13·5
Spleen	6	2·5
Suet	16	6·8
Trachea	0·75	0·3
Tripe—		
Rumen* (stomach)	44	18·6
Omasum* (head)	15	6·3
Abomasum* (yearning) ...	9·5	4·0
Rectum* ...	5·75	2·4
Heartbread or kernel	2·5	1·1
Pancreas or collop	2·5	1·1
Thymus or sweetbread	3.25	1·4
Total ...	236·25	100·0

Hindquarter.	Gm.	
Bone	8	2·8
Marrow	4	1·4
Meat	277	95·8
Total ...	289	100·0

Loin.	Gm.	
Bone	21	12·5
Meat	147	87·5
Total	168	100·0

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* With attached tallow fat (waste).

PROPORTIONS OF PARTS—*continued.*

Half Head.

	Lb.	Per-centage.
Bone	2·2	44·9
Brain	1·1	22·5
Cartilage	0·1	2·0
Cheek	0·8	16·3
Tongue	0·3	6·1
Tongue root ...	0·4	8·2
Total ...	4·9	100·0

Tail.

	Gm.	Per-centage.
Bone	44	43·1
Meat	58	56·9
Total ...	102	100·0

Foot.

	Oz.	
Bone	9·5	59·8
Marrow	0·5	3·1
Meat	5·9	37·1
Total	15·9	100·0

PROPORTIONS OF FAT AND EDIBLE IN OFFAL.

Thin Skirt.

Edible	39	75·0
Skin (waste) ...	13	25·0
Total ...	52	100·0

Trachea.

	Gm.	
Edible	86	35·8
Waste	154	64·2
Total	240	100·0

Tripe, Rumen.

Edible ...	1,247	87·3
Tallow fat ...	182	12·7
Total ...	1,429	100·0

Thick Skirt.

Edible	99	72·3
Skin and Tallow ...	38	27·7
Total ...	137	100·0

Tripe, Abomasum.

Edible	272	72·3
Fat	55	14·6
Waste	49	13·0
Total	376	99·9

Tripe, Omasum.

Edible	430	31·5
Food residues ...	880	64·5
Tallow fat ...	55	4·0
Total ...	1,365	100·0

Tripe, Rectum.

Edible	159	69·4
Fat	59	25·8
Waste	11	4·8
Total	229	100·0

VEAL.

Analytical Data of Parts of Carcase, Head, Foot, Tail.

—	Water.	Ash.	Sodium Chloride.	Protein.	Carbo-hydrate.	Fat.	Total.	Energy Value. Calories per—		
								100 gm.	1 oz.	1 lb.
Forequarter—										
Meat	74·4	1·2	0·1	19·6	—	4·1	99·4	118·5	33·6	537·5
Hindquarter—										
Meat	74·1	1·3	0·1	20·4	—	2·7	98·6	108·8	30·8	493·5
Marrow	25·0	1·0	0·0	4·7	—	69·2	99·9	662·8	187·9	3,006·5
Loin—										
Meat	66·4	1·0	0·1	19·7	—	13·3	100·5	204·5	58·0	927·6
Head—										
Bone, extract	—	—	—	1·2	—	0·1	to 100	5·9	1·7	26·8
Brain	82·1	1·2	0·1	9·4	—	7·3	100·1	145·0	41·1	657·7
Cheek	69·8	0·9	0·3	18·3	—	9·9	99·2	167·1	47·4	758·0
Tongue	77·1	0·9	0·2	17·5	—	2·5	98·0	95·0	26·9	430·9
Tongue root	72·1	1·0	0·3	19·3	—	7·3	100·0	147·0	41·7	666·8
Foot— ...										
Bone, extract	—	—	—	2·2	—	3·6	to 100	42·5	12·1	192·8
Marrow	8·5	0·8	—	1·6	—	89·6	100·5	839·8	238·1	3,809·3
Meat	64·5	0·8	—	25·8	—	8·6	99·7	185·8	52·7	842·8
Tail—										
Bone, extract	—	—	—	11·9	—	7·6	to 100	119·5	33·9	542·0
Meat	64·6	0·5	—	25·3	—	10·0	100·4	196·7	55·8	892·2

VEAL.

ANALYTICAL DATA OF OFFAL.

—	Water.	Ash.	Sodium Chloride.	Protein.	Carbo-hydrate. By diff.	Fat.	Total.	Energy Value. Calories per—		
								100 gm.	1 oz.	1 lb.
Diaphragm—										
Thick skirt*	74·7	1·0	—	17·7	—	6·6	100·0	134·0	38·0	607·8
Thin skirt*	76·0	1·0	—	17·5	—	5·5	100·0	122·9	34·8	557·5
Gullet	79·6	0·9	—	15·9	—	3·1	99·5	94·0	26·6	426·4
Heart	78·0	1·2	0·1	14·1	2·0	4·6	100·0	108·8	30·8	493·5
Kidneys	77·7	1·4	0·3	16·8	—	2·9	99·1	95·9	27·2	435·0
Liver	72·6	1·3	0·1	14·6	10·5	0·9	100·0	111·3	31·6	504·9
Lung	78·0	1·4	0·4	16·5	—	2·5	98·8	90·9	25·8	412·3
Spleen	76·4	1·4	0·1	20·3	—	1·8	100·0	100·0	28·4	453·6
Suet	14·5	0·3	—	5·1	—	79·2	99·1	757·5	214·8	3,436·0
Tallow fat	39·5	0·7	—	6·3	—	53·7	100·2	525·2	148·9	2,382·3
Trachea*	71·4	1·0	—	16·8	—	10·8	100·0	169·3	48·0	767·9
Tripe—										
Rumen	81·3	1·2	—	15·7	—	2·1	100·3	83·9	23·8	380·6
Omasum	85·9	0·5	—	12·7	—	1·2	100·3	63·2	17·9	286·7
Abomasum	81·2	0·8	—	12·5	—	5·1	99·6	98·7	28·0	447·7
Rectum	80·3	0·9	—	15·1	—	3·5	99·8	94·5	26·8	428·6
Heartbread or kernel	74·9	1·6	0·3	18·3	—	4·9	100·0	120·6	34·2	547·0
Pancreas or collop	69·0	1·5	0·2	22·1	—	6·6	99·4	152·0	43·1	689·5
Thymus or sweetbread	75·7	2·1	0·2	20·5	—	1·8	100·3	100·8	28·6	457·2
Testis	71·0	1·2	—	22·5	—	5·5	100·2	143·4	40·6	650·5

* Owing to the organ drying before the analysis could be undertaken, the actual analytical data have been calculated on the basis of the ash being 1 per cent.

VEAL.

ANALYTICAL DATA CALCULATED ACCORDING TO PROPORTIONS OF PARTS IN CARCASE.

—	Percentage Amount.	Water.	Ash.	Sodium Chloride.	Protein.	Carbohydrate.	Fat.	Energy Values. Calories per		
								100 gm.	1 oz.	1 lb.
Forequarter—										
Bone	16·1	—	—	—	—	—	—			
Meat	83·9	62·4	1·0	0·1	16·44	—	3·44			
Whole	100·0	62·4	1·0	0·1	16·44	—	3·44	99·4	28·2	450·9
Hindquarter—										
Bone	2·8	—	—	—	—	—	—			
Marrow	1·4	0·4	0·0	—	0·07	—	0·97			
Meat	95·8	71·0	1·2	0·1	19·54	—	2·59			
Whole	100·0	71·4	1·2	0·1	19·61	—	3·56	113·5	32·2	514·8
Loin—										
Bone	12·5	—	—	—	—	—	—			
Meat	87·5	58·1	0·9	0·1	17·24	—	11·64			
Whole	100·0	58·1	0·9	0·1	17·24	—	11·64	178·9	50·7	811·5
Half Carcase—										
Forequarter	40·5	25·3	0·4	0·04	6·66	—	1·39			
Hindquarter	41·0	29·3	0·5	0·04	8·04	—	1·46			
Loin	18·5	10·8	0·2	0·02	3·19	—	2·15			
Whole	100·0	65·4	1·1	0·10	17·89	—	5·00	119·9	34·0	543·9

VEAL.

ANALYTICAL DATA CALCULATED ACCORDING TO PROPORTIONS OF PARTS IN HEAD, FOOT, TAIL.

—	Percentage Amount.	Water.	Ash.	Sodium Chloride.	Protein.	Carbohydrate.	Fat.	Energy Values. Calories per—		
								100 gm.	1 oz.	1 lb.
Head—										
Bone	44·6	—	—	—	0·54	—	0·04			
Brain	21·4	17·6	0·3	0·02	2·01	—	1·56			
Cheek	16·4	11·5	0·2	0·05	3·00	—	1·62			
Tongue	6·9	5·3	0·1	0·01	1·21	—	0·17			
Tongue-root	8·6	6·2	0·1	0·03	1·66	—	0·63			
Cartilage	2·3	—	—	—	—	—	—			
Whole	100·2	40·6	0·7	0·11	8·42	—	4·02	71·9	20·4	326·1
Foot—										
Bone	59·7	—	—	—	1·31	—	2·15			
Marrow	3·3	0·3	0·0	0·0	0·05	—	2·96			
Meat	37·2	24·0	0·3	—	9·60	—	3·20			
Whole	100·2	24·3	0·3	0·0	10·96	—	8·31	122·2	34·6	554·3
Tail—										
Bone	43·1	—	—	—	5·13	—	3·28			
Meat	56·9	—	—	—	14·40	—	5·69			
Whole	100·0	—	—	—	19·53	—	8·97	163·5	46·3	741·6

VEAL.

ANALYTICAL DATA CALCULATED ACCORDING TO PROPORTIONS OF PARTS IN OFFAL.

—	Percentage Amount.	Water.	Ash.	Sodium Chloride.	Protein.	Carbohydrate.	Fat.	Energy Value. Calories per—		
								100 gm.	1 oz.	1 lb
Thick Skirt—										
Edible	72·3	54·0	0·7	—	12·80	—	4·77			
Waste	27·7	—	—	—	—	—	—			
Whole	100·0	54·0	0·7	—	12·80	—	4·77	96·9	27·5	439·5
Thin Skirt—										
Edible	75·0	57·7	0·8	—	13·13	—	4·13			
Waste	25·0	—	—	—	—	—	—			
Whole	100·0	57·7	0·8		13·13	—	4·13	92·2	26·1	418·2
Trachea—										
Edible	35·8	25·6	0·7	—	6·01	—	3·87			
Waste	64·2	—	—	—	—	—	—			
Whole	100·0	25·6	0·7	—	6·01	—	3·87	60·6	17·2	274·9
Tripe, Rumen—										
Edible	87·3	71·0	1·1	—	13·71	—	1·83			
Waste	12·7	—	—	—	—	—	—			
Whole	100·0	71·0	1·1	—	13·71	—	1·83	73·2	20·8	332·0

Tripe, Omasum—										
Edible	31·5	27·1	0·2	—	4·00	—	0·38			
Waste	68·5	—	—	—	—	—	—			
Whole	100·0	27·1	0·2	—	4·00	—	0·38	19·9	5·6	90·3
Tripe, Abomasum—										
Edible	72·3	58·7	0·6	—	9·04	—	3·69			
Waste	27·6	—	—	—	—	—	—			
Whole	99·9	58·7	0·6	—	9·04	—	3·69	71·4	20·2	323·9
Tripe, Rectum—										
Edible	69·4	55·7	0·6	—	10·48	—	2·43			
Waste	30·6	—	—	—	—	—	—			
Whole	100·0	55·7	0·6	—	10·48	—	2·43	65·6	18·6	297·6

VEAL.

Data of Offal calculated according to Proportions of Whole.

—	Percentage Amount.	Water.	Ash.	Sodium Chloride.	Protein.	Carbohydrate.	Fat.	Energy Value. Calories per—		
								100 gm.	1 oz.	1 lb.
Diaphragm, thick skirt... ...	2·5	1·4	0·02	—	0·32	—	0·12			
,, thin skirt	3·0	1·7	0·02	—	0·39	—	0·12			
Gullet	1·7	1·4	0·02	—	0·27	—	0·05			
Heart	8·9	6·9	0·11	0·01	1·26	0·18	0·41			
Kidneys	4·7	3·6	0·07	0·01	0·79	—	0·14			
Liver	21·2	15·4	0·28	0·02	3·10	2·23	0·19			
Lungs	13·5	10·5	0·19	0·05	2·23	—	0·34			
Spleen	2·5	1·9	0·03	0·00	0·51	—	0·04			
Suet	6·8	1·0	0·02	—	0·35	—	5·39			
Trachea	0·3	0·1	0·00	—	0·02	—	0·01			
Tripe, Rumen	18·6	13·2	0·20	—	2·55	—	0·34			
,, Omasum	6·3	1·7	0·01	—	0·25	—	0·02			
,, Abomasum	4·0	2·3	0·02	—	0·36	—	0·15			
,, Rectum	2·4	1·3	0·01	—	0·25	—	0·06			
Heartbread	1·1	0·8	0·02	0·00	0·20	—	0·05			
Pancreas	1·1	0·8	0·02	0·00	0·24	—	0·07			
Thymus	1·4	1·1	0·03	0·00	0·29	—	0·03			
Whole offal	100·0	65·1	1·07	0·09	13·38	2·41	7·53	134·8	38·2	611·4

VEAL.

Data calculated according to Proportions in the Whole Animal.

—	Percentage Amount.	Water.	Ash.	Sodium Chloride.	Protein.	Carbohydrate.	Fat.	Energy Value. Calories per—		
								100 gm.	1 oz.	1 lb.
Carcase	50·4	33·0	0·55	0·05	9·02	—	2·52			
Head	5·9	2·4	0·04	0·01	0·50	—	0·24			
Offal	8·1	5·3	0·09	0·01	1·08	0·20	0·61			
Tail	0·1	—	—	—	0·02	—	0·01			
Waste	13·3	—	—	—	—	—	—			
Loss	22·1	—	—	—	—	—	—			
Whole calf (live)	99·9	40·7	0·68	0·07	10·62	0·20	3·38	75·8	21·5	343·8

MUTTON AND LAMB.

All parts of the sheep were not derived from the same animal.

The flesh, or carcase, consisted of defrosted New Zealand mutton as supplied for Army use in 1917. This meat was of best quality and contained large quantities of fat.

The amount of bone in the sections was usually very low; the mean value calculated from the proportions of parts was about 7 per cent. In computing the energy value of the carcase another 10 per cent., making the total deduction 17 per cent., can be fairly deducted. (See amount of bone in beef.)

The other parts were from recently killed animals.

Tripe is not included amongst the parts of the offal, as it is not usually eaten.

In the case of the sheep, the tongue is included in the head, which is generally purchased complete.

Lamb is usually the flesh of the sheep under one year old. Except in flavour and greater delicacy of the flesh, which is less fat, there is little difference between the old and young animals.

The analyses of lamb have been restricted to the parts of the carcase, so as to obtain a comparison between the flesh of mutton and lamb. The same joints are cut and the proportions of the parts are the same as in mutton. Defrosted New Zealand lamb was used.

SHEEP.

Proportions of Parts.

Live Animal.

	Lb.	Percentage.
Carcase	53·0	54·6
Head	2·75	2·8
Offal	5·75	5·9
Waste—		
Blood	4·0	4·1
Hide	16·75	17·3
Horn and skin of head	1·25	1·3
Intestines ...	10·5	10·8
Loss—		
Blood, and water on evaporation	3·0	3·1
Total	97·0	99·9

Carcase.

Breast	5·75	13·1
Legs	14·5	33·0
Loin	10·75	24·4
Neck	2·25	5·1
Ribs	3·0	7·0
Shoulders	7·75	17·6
Total	44·0	100·2

Head.

	Oz.	Percentage
Bones	23·0	52·3
Brain	4·0	9·1
Cheek meat ...	12·0	27·3
Tongue	2·5	5·7
Tongue root ...	2·5	5·7
Total	44·0	100·1

Offal.

Gullet	3·0	3·3
Heart	8·0	8·7
Kidneys	4·0	4·3
Liver	16·0	17·4
Lungs	16·0	17·4
Spleen	2·5	2·7
Suet	32·0	34·8
Trachea	6·0	6·5
Heartbread or kernel	1·0	1·1
Pancreas or collop	1·5	1·6
Thymus or sweetbread	2·0	2·2
Total	92·0	100·0

Testis.

Interior	15·5	73·5
Skin	5·6	26·5
	21·1	100·0
Total		

PROPORTIONS OF BONE, FAT AND SKIN, AND LEAN, IN SECTIONS OF PARTS OF CARCASE.

Breast.

	Gm.	Per-centage.
Bone	30	11·2
Fat and lean	239	88·8
Total	269	100·0

Neck.

	Gm.	Per-centage.
Bone	60	22·1
Fat	72	26·5
Gristle	8	2·9
Lean	132	48·5
Total	272	100·0

Leg.

	Gm.	Per-centage.
Bone	9	3·1
Fat and skin	75	26·1
Lean	200	70·0
Marrow	3	1·0
Total	287	100·2

Ribs.

	Gm.	Per-centage.
Bone	34	12·9
Fat and skin	148	56·1
Lean	82	31·1
Total	264	100·1

Loin.

	Gm.	Per-centage.
Bone	19	5·5
Fat and skin	200	58·1
Lean	125	36·3
Total	344	99·9

Shoulder.

	Gm.	Per-centage.
Bone	18	5·4
Fat and skin	120	36·3
Lean	185	55·9
Marrow	8	2·4
Total	331	100·0

MUTTON.

ANALYTICAL DATA OF PARTS IN SECTIONS OF JOINTS.

—	Water.	Ash.	Sodium Chloride.	Protein.	Carbo-hydrate.	Fat.	Total.	Energy Value. Calories per—		
								100 gm.	1 oz.	1 lb.
Breast—										
Fat and lean	34·1	0·6	0·1	12·2	—	53·0	100·0	542·9	153·9	2,462·6
Leg—										
Fat and skin	7·8	0·2	—	4·9	—	87·0	99·9	829·2	235·1	3,761·3
Lean	70·8	1·1	0·1	21·1	—	7·0	100·1	151·6	43·0	687·7
Marrow	8·4	0·0	—	1·5	—	89·1	99·0	834·8	236·7	3,786·7
Loin—										
Fat and skin	6·7	0·0	—	2·8	—	90·0	99·5	848·5	240·6	3,848·8
Lean	65·8	1·0	0·1	21·6	—	11·8	100·3	198·3	56·2	899·5
Neck—										
Fat and skin	10·3	0·4	—	4·2	—	84·7	99·6	804·9	228·2	3,651·0
Lean	54·2	1·0	0·1	17·4	—	25·6	98·3	309·4	87·7	1,403·4
Ribs—										
Fat and skin	5·6	0·0	—	2·2	—	92·4	100·2	868·3	246·2	3,938·6
Lean	54·5	1·1	0·1	19·1	—	25·2	100·0	312·7	88·7	1,418·4
Shoulder—										
Fat and skin	17·0	0·5	—	6·4	—	75·3	99·2	726·5	206·0	3,295·4
Lean	69·4	11·0	0·1	19·5	—	9·6	99·6	169·2	48·0	767·5
Marrow	7·1	0·9	—	0·9	—	92·1	101·0	860·2	243·9	3,901·9

MUTTON.

ANALYTICAL DATA OF OFFAL.

—	Water.	Ash.	Sodium Chloride.	Protein.	Carbo-hydrate. By diff.	Fat.	Total.	Energy Value. Calories per—		
								100 gm.	1 oz.	1 lb.
Gullet	73·2	0·9	—	18·2	—	7·0	99·3	139·7	39·6	633·7
Heart	77·7	1·1	0·1	16·6	2·9	1·6	100·0	94·8	26·9	430·0
Kidney	75·8	1·3	0·6	17·1	—	3·5	98·3	102·7	29·1	465·9
Liver	71·3	1·6	0·1	21·5	2·5	3·0	100·0	126·3	35·8	572·9
Lung	77·2	1·1	0·2	18·7	—	1·4	98·6	89·7	25·4	406·9
Spleen	74·4	1·6	0·2	18·8	—	3·9	98·9	114·0	32·3	517·1
Suet...	2·5	0·1	—	1·3	—	96·6	100·5	903·7	256·2	4,099·2
Trachea	55·0	1·2	—	17·5	—	26·1	99·8	314·5	89·2	1,426·6
Heartbread or kernel	63·7	1·6	0·1	13·4	—	21·3	100·1	253·0	71·7	1,147·6
Pancreas or collop	71·4	1·9	0·1	19·9	—	5·5	98·8	132·7	37·6	601·9
Thymus or sweetbread	67·6	1·8	0·1	16·6	—	14·7	100·8	204·6	58·0	928·1
Testis—										
Interior	86·1	1·2	0·3	10·6	—	1·1	99·3	53·7	15·2	243·6
Skin	73·1	1·1	0·4	23·0	—	2·8	100·4	120·3	34·1	545·7
ANALYTICAL DATA OF PARTS OF HEAD.										
Brain	78·0	1·4	0·3	10·5	—	10·5	100·7	140·7	42·7	683·6
Cheek meat	54·2	0·9	0·2	18·1	—	27·5	100·9	330·0	93·6	1,496·9
Tongue	57·3	1·0	0·2	12·4	—	27·5	98·4	306·6	86·9	1,390·7
Tongue root	48·0	1·0	0·2	13·4	—	30·3	92·9	336·7	95·5	1,527·3

MUTTON.

Analytical Data calculated according to Proportions of Fat, Skin and Lean in Sections of Joints.

—	Percentage Amount.	Water.	Ash.	Sodium Chloride.	Protein.	Carbohydrate.	Fat.	Energy Value. Calories per—		
								100 gm.	1 oz.	1 lb.
Breast—										
Bone	11·2	—	—	—	—	—	—			
Fat and lean	88·8	30·3	0·53	0·09	10·83	—	47·06			
Whole	100·0	30·3	0·53	0·09	10·83	—	47·06	482·1	136·7	2,186·8
Leg—										
Bone	3·1	—	—	—	—	—	—			
Fat and skin	26·1	2·0	0·05	—	1·28	—	22·71			
Lean	70·0	49·6	0·77	0·07	14·77	—	4·90			
Marrow	1·0	0·1	0·00	—	0·02	—	0·89			
Whole	100·2	51·7	0·82	0·07	16·07	—	28·50	330·9	93·8	1,501·0
Loin—										
Bone	5·5	—	—	—	—	—	—			
Fat and skin	58·1	3·9	0·0	—	1·63	—	52·29			
Lean	36·3	23·9	0·36	0·04	7·84	—	4·28			
Whole	99·9	27·8	0·36	0·04	9·47	—	56·57	564·9	160·2	2,562·4

Neck—										
Bone	22·1	—	—	—	—	—	—			
Fat	26·5	2·7	0·11	—	1·11	—	22·44			
Gristle	2·9	—	—	—	—	—	—			
Lean	48·5	26·3	0·49	0·05	8·44	—	12·42			
Whole	100·0	29·0	0·60	0·05	9·55	—	34·86	363·3	103·0	1,647·9
Ribs—										
Bone	12·9	—	—	—	—	—	—			
Fat and skin	56·1	3·1	0·0	—	1·23	—	51·84			
Lean	31·1	17·0	0·34	0·03	5·94	—	7·84			
Whole	100·1	20·1	0·34	0·03	7·17	—	59·68	584·4	165·0	2,640·8
Shoulder—										
Bone	5·4	—	—	—	—	—	—			
Fat and skin	36·3	6·2	0·18	—	2·32	—	27·33			
Lean	55·9	38·8	0·56	0·06	10·90	—	5·37			
Marrow	2·4	0·2	0·02	—	0·02	—	2·21			
Whole	100·0	45·2	0·76	0·06	13·24	—	34·91	379·0	107·5	1,719·1

MUTTON.

Analytical Data calculated according to Proportions of Parts of Offal.

—	Percentage Amount.	Water.	Ash.	Sodium Chloride.	Protein.	Carbohydrate.	Fat.	Energy Value. Calories per—		
								100 gm.	1 oz.	1 lb.
Gullet—										
Internal waste	35·6	—	—	—	—	—	—			
Muscular coat	64·4	47·1	0·6	—	11·72	—	4·51			
Whole	100·0	47·1	0·6	—	11·72	—	4·51	90·0	25·5	408·2
Trachea—										
Cartilage	20·0	—	—	—	—	—	—			
Edi	80·0	44·0	1·0	—	14·00	—	20·88			
Whole	100·0	44·0	1·0	—	14·00	—	20·88	251·6	71·3	1,141·3
Testis—										
Interior	73·2	63·0	0·9	0·2	7·76	—	0·80			
Skin	26·8	19·6	0·3	0·1	6·16	—	0·75			
Whole	100·0	82·6	1·2	0·3	13·92	—	1·55	71·5	20·3	324·3

MUTTON.

ANALYTICAL DATA OF JOINTS CALCULATED ACCORDING TO PROPORTIONS IN CARCASE.

—	Per-centage Amount.	Water.	Ash.	Sodium Chloride.	Protein.	Carbo-hydrate.	Fat.	Energy Value. Calories per—		
								100 gm.	1 oz.	1 lb.
Breast	13·1	4·0	0·07	0·01	1·42	—	6·17			
Legs...	33·0	17·1	0·27	0·02	5·30	—	9·41			
Loin...	24·4	6·8	0·09	0·01	2·31	—	13·80			
Neck	5·1	1·5	0·03	0·00	0·49	—	1·78			
Ribs...	7·0	1·4	0·02	0·00	0·50	—	4·18			
Shoulders	17·6	8·0	0·13	0·01	2·33	—	6·14			
Whole carcase	100·2	38·8	0·61	0·05	12·35	—	41·48	436·4	123·7	1,979·5
Less 10 per cent. for more bone	—	34·9	0·55	0·04	11·12	—	37·33	392·8	111·4	1,781·7

ANALYTICAL DATA OF PARTS OF HEAD CALCULATED ACCORDING TO PROPORTIONS.

—	Per-centage Amount.	Water.	Ash.	Sodium Chloride.	Protein.	Carbo-hydrate.	Fat.	100 gm.	1 oz.	1 lb.
Bone	53·9	—	—	—	—	—	—			
Brain	8·5	6·6	0·1	0·03	0·89	—	0·89			
Cheek meat	26·0	14·1	0·2	0·05	4·71	—	7·15			
Tongue	5·9	3·4	0·1	0·01	0·73	—	1·62			
Tongue root	5·7	2·7	0·1	0·01	0·76	—	1·73			
Whole head	100·0	26·8	0·5	0·10	7·09	—	11·39	135·1	38·3	612·8

MUTTON.

ANALYTICAL DATA OF PARTS OF OFFAL CALCULATED ACCORDING TO PROPORTIONS.

—	Percentage Amount.	Water.	Ash.	Sodium Chloride.	Protein.	Carbohydrate.	Fat.	Energy Value. Calories—		
								100 gm.	1 oz.	1 lb.
Gullet	3·3	1·6	0·02	—	0·39	—	0·15			
Heart	8·7	6·8	0·10	0·01	1·44	0·25	0·14			
Kidneys	4·3	3·3	0·06	0·03	0·74	—	0·15			
Liver	17·4	12·4	0·28	0·02	3·74	0·44	0·52			
Lungs	17·4	13·4	0·19	0·04	3·25	—	0·24			
Spleen	2·7	2·0	0·04	0·01	0·51	—	0·11			
Suet	34·8	0·9	0·03	—	0·45	—	33·62			
Trachea	6·5	2·9	0·07	—	0·91	—	1·36			
Heartbread	1·1	0·7	0·02	0·00	0·15	—	0·23			
Pancreas	1·6	1·1	0·03	0·00	0·32	—	0·09			
Thymus	2·2	1·5	0·04	0·00	0·37	—	0·32			
Whole offal...	100·0	46·6	0·88	0·11	12·27	0·69	36·93	396·6	112·4	1,799·0

MUTTON.

Data Calculated according to Proportions in Whole Animal.

—	Percentage Amount.	Water.	Ash.	Sodium Chloride.	Protein.	Carbohydrate.	Fat.	Energy Value. Calories per—		
								100 gm.	1 oz.	1 lb.
Carcase	54·6	19·1	0·30	0·02	6·07	—	20·38			
Head	2·8	0·7	0·01	0·00	0·20	—	0·32			
Offal	5·9	2·8	0·05	0·01	0·72	0·04	2·18			
Waste	33·5	—	—	—	—	—	—			
Loss	3·1	—	—	—	—	—	—			
Whole sheep (live)	99·9	22·6	0·36	0·03	6·99	0·04	22·88	241·6	68·5	1,095·9

LAMB.

Proportions of Parts in Sections of Joints.

Breast.

	Gm.	Percentage.
Bone	11	4·4
Fat and lean ...	240	95·6
Total	251	100·0

Leg.

	Gm.	Percentage.
Bone	4	1·9
Fat and skin ...	44	20·5
Lean	166	77·6
Total	214	100·0

Loin.

	Gm.	Percentage.
Bone	23	8·1
Fat and skin ...	103	36·2
Lean	158	55·7
Total	284	100·0

Neck.

	Gm.	Percentage.
Bone	37	14·1
Fat and skin ...	134	51·1
Lean	91	34·7
Total	262	99·9

Ribs.

	Gm.	Percentage.
Bone	30	13·9
Fat and skin ...	90	41·7
Lean	96	44·4
Total	216	100·0

Shoulder.

	Gm.	Percentage.
Bone	6	3·0
Fat and skin ...	75	37·1
Lean	121	59·9
Total	202	100·0

LAMB.

ANALYTICAL DATA OF PARTS IN SECTIONS OF JOINTS.

—	Water.	Ash.	Sodium Chloride.	Protein.	Carbo-hydrate.	Fat.	Total	Energy Value. Calories per—		
								100 gm.	1 oz.	1 lb.
Breast—										
Fat and lean	32·1	0·6	—	12·5	—	54·1	99·3	554·4	157·2	2,514·8
Leg—										
Fat and skin	14·8	0·4	—	6·3	—	78·5	100·0	755·9	214·3	3,428·8
Lean	71·7	1·2	0·1	20·5	—	5·9	99·4	138·9	39·4	630·0
Loin—										
Fat and skin	16·2	0·5	—	5·7	—	77·8	100·2	746·9	211·8	3,387·9
Lean	71·6	1·1	0·1	20·6	—	5·5	98·9	135·6	38·4	615·1
Neck—										
Fat and skin	19·1	0·5	—	6·9	—	73·5	100·0	711·8	201·8	3,228·7
Lean	61·7	1·1	0·1	19·7	—	16·7	99·3	236·1	66·9	1,070·9
Ribs—										
Fat and skin	20·3	0·4	—	8·7	—	70·3	99·7	689·5	195·5	3,127·6
Lean	65·6	0·9	0·1	20·6	—	12·3	99·5	198·8	56·4	901·8
Shoulder—										
Fat and skin	20·7	0·6	—	6·0	—	72·9	100·2	702·6	199·2	3,187·0
Lean	70·3	1·3	0·1	18·7	—	8·7	99·1	157·6	44·7	714·9

LAMB.

Analytical Data Calculated according to Proportions of Parts in Sections of Joints.

—	Percentage Amount.	Water.	Ash.	Sodium Chloride.	Protein.	Carbohydrate.	Fat.	Energy Value. Calories per—		
								100 gm.	1 oz.	1 lb.
Breast—										
Bone	4·4	—	—	—	—	—	—			
Fat and lean	95·6	30·7	0·57	—	11·95	—	51·72			
Whole	100·0	30·7	0·57	—	11·95	—	51·72	530·0	150·2	2,404·1
Leg—										
Bone	1·9	—	—	—	—	—	—			
Fat and skin	20·5	3·0	0·08	—	1·29	—	16·09			
Lean	77·6	55·6	0·93	0·08	15·91	—	4·58			
Whole	100·0	58·6	1·01	0·08	17·20	—	20·67	262·8	74·5	1,192·1
Loin—										
Bone	8·1	—	—	—	—	—	—			
Fat and skin	36·2	5·9	0·18	—	2·06	—	28·16			
Lean	55·7	39·9	0·61	0·06	11·47	—	3·06			
Whole	100·0	45·8	0·79	0·06	13·53	—	31·22	345·8	98·0	1,568·6
Neck—										
Bone	14·1	—	—	—	—	—	—			
Fat and skin	51·1	9·8	0·26	—	3·53	—	37·56			
Lean	34·7	21·4	0·38	0·03	6·84	—	5·80			
Whole	99·9	31·2	0·64	0·03	10·37	—	43·36	445·8	126·4	2,022·2

Ribs—										
Bone	13·9	—	—	—	—	—	—			
Fat and skin	41·7	8·5	0·17	—	3·63	—	29·32			
Lean	44·4	29·1	0·40	0·04	9·15	—	5·46			
Whole	100·0	37·6	0·57	0·04	12·78	—	34·78	375·9	106·6	1,705·1
Shoulder—										
Bone	3·0	—	—	—	—	—	—			
Fat and skin	37·1	7·7	0·22	—	2·23	—	27·05			
Lean	59·9	42·1	0·78	0·06	11·20	—	5·21			
Whole	100·0	49·8	1·0	0·06	13·43	—	32·26	355·1	100·7	1,610·7

LAMB.

DATA CALCULATED ACCORDING TO PROPORTIONS IN CARCASE.

—	Percentage Amount.	Water.	Ash.	Sodium Chloride.	Protein.	Carbohydrate.	Fat.	Energy Value. Calories per—		
								100 gm.	1 oz.	1 lb.
Breast	13·1	4·0	0·07	—	1·56	—	6·77			
Legs...	33·0	19·3	0·33	0·03	5·68	—	6·82			
Loin...	24·4	11·2	0·19	0·01	3·30	—	7·62			
Neck	5·1	1·6	0·03	0.00	0·53	—	2·21			
Ribs...	7·0	2·6	0·04	0·00	0·90	—	2·43			
Shoulders	17·6	8·8	0·18	0·01	2·36	—	5·68			
Whole carcase	100·2	47·5	0·84	0·05	14·33	—	31·53	352·0	99·8	1,596·7

PORK.

All the material used in these analyses was derived from recently killed pigs. The animals were not highly fattened, as is seen from the proportions of fat and lean in the sections of the several joints into which the carcase is usually cut.

The pig differs from the ox and sheep in that the skin is cleaned and used as food. The skin was separated before analysis, so that the food value, with and without skin, can be calculated. It is included in the following calculations, though it is often too tough to be really edible. Before analysis, it was necessary to boil the skin in water on account of its toughness; the boiled skin and the extract were analysed. Another point of difference is that the head and trotters are sold with the carcase. The trotter was also boiled in water before analysis; the meat was scraped from the bone and both meat and extract were analysed.

PIG.

Proportions of Parts.

Live Animal.

		Lb.	Percentage.
Carcase		122·0	84·1
Offal		4·25	2·9
Blood ...	3·0		
Intestines ...	11·25		
		14·25	9·8
Loss in blood, food residues and water on evaporation ...		4·50	3·1
Total		145·0	99·9

Carcase.

	Lb.	Percentage.
Flesh	108	88·5
Head	12	9·8
Trotters	2	1·6
Total	122	99·9

Flesh.

	Lb.	Percentage.
Belly	16	13·2
Legs	36	29·7
Loin	29	24·0
Shoulders	40	33·1
Total	121	100·0

Belly.

	Gm.	Percentage.
Bone	52	13·0
Fat	116	29·1
Lean	199	49·9
Skin	32	8·0
Total	399	100·0

Loin.

	Gm.	Percentage.
Bone	53	16·0
Fat...	97	29·2
Lean	164	49·4
Skin	18	5·4
Total	332	100·0

Leg.

	Gm.	Percentage.
Bone	77	15·8
Fat...	69	14·2
Lean	297	61·1
Skin	43	8·9
Total	486	100·0

PIG.

PROPORTIONS OF PARTS—*continued.*

Shoulder.

	Gm.	Percentage.
Bone	72	12·8
Fat...	112	19·9
Lean	309	54·9
Skin	70	12·4
Total	563	100·0

Head.

	Gm.	Percentage.
Bone	1,678	34·9
Brain	136	2·8
Cheeks	2,042	42·5
Ears	334	7·0
Tongue	223	4·6
Tongue root ...	393	8·2
Total	4,806	100·0

Trotter.

	Gm.	Percentage.
Bone	97	44·5
Meat	121	55·5
Total	218	100·0

Offal.

	Oz.	Percentage.
Gullet	2	3·0
Heart	8	11·8
Kidneys	6	8·8
Liver	26	38·2
Lungs	12	17·6
Spleen	2	2·9
Trachea	6	8·8
Heartbread or kernel	2	2·9
Pancreas or collop	2	3·0
Thymus or sweetbread	2	2·9
Total	68	99·9

Gullet.

	Gm.	Percentage.
Edible muscular coat	84	73·7
Interior, waste ...	30	26·3
Total	114	100·0

Trachea.

	Gm.	Percentage.
Cartilage, waste ...	34	24·3
Edible part ...	106	75·7
Total	140	100·0

PORK.

Analytical Data of Parts in Sections of Joints, Head, Trotter.

—	Water.	Ash.	Sodium Chloride.	Protein.	Carbo-hydrate.	Fat.	Total.	Energy Value. Calories per—		
								100 gm.	1 oz.	1 lb.
Belly—										
Fat	13·0	0·2	—	5·9	—	80·7	99·8	774·7	219·6	3,514·0
Lean	66·0	1·0	0·2	20·1	—	12·5	99·8	198·7	56·3	901·3
Leg—										
Fat	38·4	0·6	—	14·5	—	44·5	98·0	473·3	134·2	2,146·9
Lean	73·8	1·0	0·2	19·3	—	6·0	100·3	134·9	38·2	611·9
Loin—										
Fat	8·3	0·1	—	3·1	—	88·9	100·4	839·5	238·0	3,808·0
Lean	66·0	1·1	0·2	21·4	—	11·1	99·8	191·0	54·2	866·4
Shoulder—										
Fat	14·9	0·2	—	6·3	—	78·7	100·1	757·7	214·8	3,436·9
Lean	63·3	1·0	0·2	19·7	—	15·9	100·1	228·6	64·8	1,036·9
Skin, after boiling—										
Extract, jelly	—	—	—	3·7	—	0·9	to 100	23·5	6·7	106·6
Residue	56·2	0·2	—	23·4	—	20·5	100·3	286·6	81·3	1,300·0
Whole skin	—	—	—	27·1	—	21·4	to 100	310·1	88·0	1,406·6
Head—										
Bone, Meat	—	—	—	11·3	—	18·1	to 100	214·7	60·9	973·9
,, Extract	—	—	—	2·1	—	2·1	to 100	28·1	8·0	127·5
Brain	78·5	1·5	0·4	11·3	—	9·5	100·2	134·7	38·2	611·0
Cheek	46·7	0·6	0·2	13·7	—	34·1	95·3	373·3	105·8	1,693·3
Ear	45·8	0·5	0·1	16·2	—	41·1	103·7	448·7	127·2	2,035·3
Tongue	67·1	1·1	0·1	16·5	—	15·2	100·0	209·0	59·3	948·0
Tongue root	62·1	1·1	0·1	16·8	—	19·5	99·6	250·2	70·9	1,134·9
Trotter—										
Extract	—	—	—	1·4	—	4·3	to 100	45·7	13·0	207·3
Meat	—	—	—	24·1	—	16·3	to 100	250·4	71·0	1,135·8

PORK.

ANALYTICAL DATA OF OFFAL.

—	Water.	Ash.	Sodium Chloride.	Protein.	Carbo-hydrate. By Diff.	Fat.	Total.	Energy Value. Calories per—		
								100 gm.	1 oz.	1 lb.
Blood*	85·9	0·6	0·1	12·9	—	—	99·5	52·9	15·0	239·9
Gullet	65·1	0·9	—	16·4	—	17·1	99·5	226·3	64·2	1,026·5
Heart	75·1	1·0	0·2	16·2	1·1	6·4	100·0	130·5	37·0	591·9
Kidney	76·6	1·3	0·1	17·2	—	3·2	98·4	100·3	28·4	455·0
Liver	69·9	1·6	0·2	17·1	8·5	2·7	100·0	130·1	36·9	590·1
Lung	77·6	1·2	0·3	17·7	—	2·4	99·2	94·9	26·9	430·5
Spleen	75·8	1·3	0·2	17·0	—	5·8	100·1	123·6	35·0	560·7
Trachea	59·6	1·3	—	15·7	—	23·3	100·5	281·1	79·7	1,275·1
Heartbread or kernel	47·5	1·0	0·1	8·3	—	40·6	97·5	411·6	116·7	1,867·0
Collop or pancreas	56·0	1·0	0·1	13·1	—	29·3	99·5	326·2	92·5	1,479·6
Sweetbread or thymus	74·9	1·6	0·2	15·2	—	8·5	100·4	141·4	40·1	641·4

* Blood is sometimes eaten in the form of sausages. These data are not included in the further calculations.

PORK.

ANALYTICAL DATA OF OFFAL CALCULATED ACCORDING TO PROPORTIONS OF EDIBLE PART AND WASTE.

—	Percentage Amount.	Water.	Ash.	Sodium Chloride.	Protein.	Carbohydrate.	Fat.	Energy Value. Calories per—		
								100 gm.	1 oz.	1 lb.
Gullet—										
Edible	73·7	48·0	0·66	—	12·09	—	12·60			
Waste	26·3	—	—	—	—	—	—			
Whole	100·0	48·0	0·66	—	12·09	—	12·60	166·8	47·3	756·6
Trachea—										
Edible	75·7	45·1	0·98	—	11·89	—	17·64			
Waste	24·3	—	—	—	—	—	—			
Whole	100·0	45·1	0·98	—	11·89	—	17·64	212·8	60·3	965·3

PORK.

ANALYTICAL DATA OF PARTS OF JOINTS CALCULATED ACCORDING TO PROPORTIONS.

—	Per-centage Amount.	Water.	Ash.	Sodium Chloride.	Protein.	Carbo-hydrate.	Fat.	Energy Value. Calories per— 100 gm.	1 oz.	1 lb.
Belly—										
Bone	13·0	—	—	—	—	—	—			
Fat	29·1	3·8	0·1	—	1·72	—	23·48			
Lean	49·9	32·9	0·5	0·10	10·03	—	6·24			
Skin	8·0	—	—	—	2·17	—	1·71			
Whole	100·0	36·7	0·6	0·10	13·92	—	31·43	349·4	99·0	1,584·9
Leg—										
Bone	15·8	—	—	—	—	—	—			
Fat	14·2	5·4	0·1	—	2·06	—	6·32			
Lean	61·1	45·1	0·6	0·12	11·79	—	3·67			
Skin	8·9	—	—	—	2·41	—	1·91			
Whole	100·0	50·5	0·7	0·12	16·26	—	11·90	278·3	78·9	1,262·4
Loin—										
Bone	16·0	—	—	—	—	—	—			
Fat	29·2	2·4	—	—	0·91	—	25·96			
Lean	49·4	32·6	0·5	0·10	10·57	—	5·48			
Skin	5·4	—	—	—	1·46	—	1·16			
Whole	100·0	35·0	0·5	0·1	12·94	—	32·60	356·2	101·0	1,615·7

Shoulder—										
Bone	12·8	—	—	—	—	—	—			
Fat	19·9	3·0	—	—	1·25	—	15·66			
Lean	54·9	34·7	0·5	0·11	10·81	—	8·73			
Skin	12·4	—	—	—	3·36	—	2·65			
Whole	100·0	37·7	0·5	0·11	15·42	—	27·04	314·7	89·2	1,427·5
Head—										
Bone, Extract	34·9	—	—	—	0·73	—	0·73			
,, Meat	—	—	—	—	3·94	—	6·32			
Brain	2·8	2·2	0·04	0·01	0·32	—	0·27			
Cheek	42·5	19·9	0·26	0·09	5·82	—	14·49			
Ear	7·0	3·2	0·04	0·01	1·13	—	2·88			
Tongue	4·6	3·1	0·05	0·00	0·76	—	0·70			
Tongue root	8·2	5·1	0·09	0·01	1·38	—	1·60			
Whole	100·0	33·5	0·48	0·12	14·08	—	26·99	308·7	87·5	1,400·3
Trotter—										
Bone	44·5	—	—	—	0·62	—	1·91			
Meat	55·5	—	—	—	13·38	—	9·05			
Whole	100·0	—	—	—	14·00	—	10·96	159·3	45·2	722·6

PORK.

ANALYTICAL DATA OF OFFAL CALCULATED ACCORDING TO PROPORTIONS.

—	Percentage Amount.	Water.	Ash.	Sodium Chloride.	Protein.	Carbohydrate.	Fat.	Energy Value. Calories per—		
								100 gm.	1 oz.	1 lb.
Offal—										
Gullet*	3·0	1·4	0·02	—	0·36	—	0·38			
Heart	11·8	8·9	0·12	0·02	1·52	0·13	0·76			
Kidneys	8·8	6·7	0·11	0·01	1·51	—	0·28			
Liver	38·2	26·7	0·61	0·08	6·53	3·25	1·03			
Lungs	17·6	13·7	0·21	0·05	3·11	—	0·42			
Spleen	2·9	2·2	0·04	0·01	0·49	—	0·17			
Trachea*...	8·8	4·0	0·09	—	1·05	—	1·55			
Heartbread	2·9	1·4	0·03	0·00	0·24	—	1·18			
Pancreas...	3·0	1·7	0·03	0·00	0·39	—	0·88			
Thymus	2·9	2·2	0·05	0·01	0·44	—	0·35			
Whole	99·9	68·9	1·31	0·18	15·64	3·38	7·00	143·1	40·6	649·1

* Allowing for waste as on p. 61.

PORK.

Data of Joints Calculated according to Proportions in Flesh.

—	Per-centage Amount.	Water.	Ash.	Sodium Chloride.	Protein.	Carbo-hydrate.	Fat.	Energy Value. Calories per—		
								100 gm.	1 oz.	1 lb.
Belly	13·2	4·8	0·08	0·01	1·84	—	4·15			
Leg	29·7	15·0	0·21	0·04	4·83	—	3·53			
Loin	24·0	8·4	0·12	0·02	3·11	—	7·82			
Shoulder...	33·1	12·5	0·17	0·04	5·10	—	8·95			
Whole	100·0	41·7	0·58	0·11	14·88	—	24·45	288·9	81·9	1,310·0

Data of Parts of Carcase Calculated according to Proportions.

—	Per-centage Amount.	Water.	Ash.	Sodium Chloride.	Protein.	Carbo-hydrate.	Fat.	Energy Value. Calories per—		
								100 gm.	1 oz.	1 lb.
Flesh	88·5	36·9	0·51	0·10	13·17	—	21·64			
Head	9·8	3·3	0·05	0·01	1·38	—	2·65			
Trotters	1·6	—	—	—	0·22	—	0·17			
Whole carcase	99·9	40·2	0·56	0·11	14·77	—	24·46	288·0	81·7	1,306·4

PORK.

DATA OF PARTS CALCULATED ACCORDING TO PROPORTIONS IN ANIMAL.

—	Percentage Amount.	Water.	Ash.	Sodium Chloride.	Protein.	Carbohydrate.	Fat.	Energy Value. Calories per—		
								100 gm.	1 oz.	1 lb.
Carcase	84·1	—	—	—	12·42	—	20·57			
Offal	2·9	—	—	—	0·45	0·10	0·20			
Waste	9·8	—	—	—	—	—	—			
Loss	3·1	—	—	—	—	—	—			
Whole pig (live)	99·9	—	—	—	12·87	0·10	20·77	246·3	69·8	1,117·2

BACON, GAMMON AND HAM.

A side of bacon, a whole gammon and a whole ham were used. The side of bacon was one supplied for Army rations at the Royal Army Medical College; the gammon and ham were purchased on the market.

The side of bacon was cut into four sections, each of which was weighed so as to determine its proportion in the whole. Fair samples were cut from these sections, and the samples were divided into fat, lean, skin; the amounts of these were also determined. The chemical analyses were made on these separate portions. From the various data, the values for the separate sections and the whole side are calculated. The skin is probably in most cases not eaten, so that a final deduction has been made for its amount.

The gammon and ham were separated into bone, fat, skin, and their respective amounts determined. Chemical analyses of these separate parts were made; before analysis it was necessary to boil the skin in water on account of its toughness; the boiled skin and the extract were analysed separately. The extract on cooling, in the case of ham, solidified to a jelly; it was analysed as if a solid; the analyses of this jelly and the gammon skin extract are given per 100 gm. After removing the marrow from the bones, the bones were extracted in boiling water; this extract on cooling solidified to a jelly and was treated as a solid.

PROPORTIONS OF PARTS.

Side of Bacon.

4 Sections.	Lb.	Percentage.
(1) Back ...	20	28·2
(2) Gammon ...	16	22·5
(3) Shoulder ...	21	29·6
(4) Streaky ...	14	19·7
Total ...	71	100·0

(1) *Back.*

	Gm.	Percentage.
Fat ...	98·0	63·6
Lean ...	48·0	31·2
Skin ...	8·0	5·2
Total ...	154·0	100·0

(2) *Gammon.*

	Gm.	Percentage.
Fat ...	86·5	47·5
Lean ...	90·0	49·5
Skin ...	5·5	3·0
Total ...	182·0	100·0

(3) *Shoulder.*

	Gm.	Percentage.
Bone ...	12·0	5·9
Fat ...	119·0	58·3
Lean ...	70·0	34·3
Skin ...	3·0	1·5
Total ...	204·0	100·0

(4) *Streaky.*

	Gm.	Percentage.
Fat ...	85·0	67·5
Lean ...	33·0	26·2
Skin ...	8·0	6·3
Total ...	126·0	100·0

	Gm.	Percentage.
All lean and fat ...	641·5	96·3
All skin ...	24·5	3·7
Total ...	666·0	100·0

BACON, GAMMON AND HAM.

PROPORTIONS OF PARTS—*continued.*

Gammon.

	Gm.	Percentage.
Bone ...	... 396	10·1
Fat ...	... 716	18·4
Lean ...	...2,507	64·2
Marrow ...	... 23	0·6
Skin ...	... 260	6·7
Total ...	...3,902	100·0

Ham.

	Gm.	Percentage.
Bone ...	425	9·3
Fat ...	1,820	39·8
Lean ...	2,096	45·8
Marrow ...	20	0·4
Skin ...	215	4·7
Total ...	4,576	100·0

SIDE OF BACON, GAMMON, HAM.

Analytical Data of Parts.

—	Water.	Other Ash.	Sodium Chloride.	Protein.	Carbo-hydrate.	Fat.	Total.	Energy Value. Calories per—		
								100 gm.	1 oz.	1 lb.
Side of Bacon—										
(1) *Back*—										
Fat	8·5	2·5	—	1·9	—	87·7	100·6	823·4	233·4	3,734·9
Lean	54·9	1·8	12·6	19·3	—	11·6	100·2	187·0	53·0	848·2
(2) *Gammon*—										
Fat	9·0	1·7	—	2·3	—	86·6	99·6	814·8	231·0	3,695·9
Lean	60·8	2·6	11·4	19·1	—	6·4	100·3	137·8	39·1	625·1
(3) *Shoulder*—										
Fat	9·6	2·0	—	2·3	—	86·0	99·9	809·2	229·4	3,670·5
Lean	49·5	1·7	9·0	17·7	—	21·7	99·6	274·4	77·8	1,244·7
(4) *Streaky*—										
Fat	14·3	4·4	—	3·5	—	77·2	99·4	732·3	207·6	3,321·7
Lean	56·3	1·8	13·3	21·5	—	5·9	98·8	143·0	40·5	648·7
(5) *Skin*	41·3	2·1	11·4	35·9	—	9·4	100·1	234·6	66·5	1,064·1
Gammon—										
Fat	8·4	2·1	—	4·9	—	82·0	97·4	782·7	221·9	3,550·3
Lean	60·1	1·6	10·5	20·9	—	7·8	100·9	158·2	44·9	717·6
Marrow	9·4	2·3	—	1·7	—	86·4	99·8	810·5	229·8	3,676·4
Skin	59·3	0·5	—	26·7	—	13·2	99·7	232·2	65·8	1,053·3
Skin extract	—	—	—	4·2	—	5·1	to 100	64·7	21·2	338·8
Bone extract jelly	77·4	0·6	6·8	4·9	—	8·9	98·6	102·9	29·2	466·7
Ham—										
Fat	7·0	1·0	—	3·4	—	87·5	98·9	827·7	234·6	3,754·4
Lean	61·5	2·0	6·8	20·3	—	12·3	102·9	197·6	56·0	896·3
Marrow	12·1	2·4	—	3·8	—	79·2	97·5	752·1	213·2	3,411·5
Skin	63·6	0·7	—	18·7	—	17·4	100·4	238·5	67·6	1,081·8
Skin extract jelly	87·9	0·2	0·9	6·0	—	5·0	100·0	71·1	20·2	322·5
Bone extract jelly	87·7	0·6	1·0	6·3	—	3·6	99·2	59·3	16·8	269·0

SIDE OF BACON.

ANALYTICAL DATA CALCULATED ACCORDING TO PROPORTIONS OF PARTS.

—	Per-centage Amount.	Water.	Other Ash.	Sodium Chloride.	Protein.	Carbo-hydrate.	Fat.	Energy Value. Calories per—		
								100 gm.	1 oz.	1 lb.
Back—										
Fat	63·6	5·4	1·6	—	1·2	—	55·8			
Lean	31·2	17·1	0·6	3·9	6·0	—	3·6			
Skin	5·2	2·1	0·1	0·6	1·9	—	0·5			
Whole	100·0	24·6	2·3	4·5	9·1	—	59·9	594·4	168·5	2,696·2
Gammon—										
Fat	47·5	4·3	0·8	—	1·1	—	41·1			
Lean	49·5	30·1	1·3	5·6	9·5	—	3·2			
Skin	3·0	1·2	0·1	0·3	1·1	—	0·3			
Whole	100·0	35·6	2·2	5·9	11·7	—	44·6	462·8	131·2	2,099·3
Shoulder—										
Bone	5·9	—	—	—	—	—	—			
Fat	58·3	5·6	0·1	—	1·3	—	50·1			
Lean	34·3	17·0	0·6	3·1	6·1	—	7·4			
Skin	1·5	0·6	0·0	0·2	0·5	—	0·1			
Whole	100·0	23·2	0·7	3·3	7·9	—	57·6	568·1	161·0	2,576·9

Streaky—										
Fat	67·5	9·7	3·0	—	2·4	—	52·1			
Lean	26·2	14·7	0·5	3·5	5·6	—	1·5			
Skin	6·3	2·6	0·1	0·7	2·3	—	0·6			
Whole	100·0	27·0	3·6	4·2	10·3	—	54·2	546·3	154·9	2,478·0
Side—										
Back	28·2	6·9	0·7	1·3	2·6	—	16·9			
Gammon...	22·5	8·0	0·5	1·3	2·6	—	10·0			
Shoulder...	29·6	6·9	0·2	1·0	2·3	—	17·0			
Streaky	19·7	5·3	0·7	0·8	2·0	—	10·7			
Whole...	100·0	27·1	2·1	4·4	9·5	—	54·6	546·7	154·9	2,479·8
Less 3·7 per cent. for Skin ...	—	26·1	2·0	4·2	9·1	—	52·6	536·5	149·2	2,388·0

GAMMON.

Analytical Data Calculated according to Proportions of Parts.

—	Percentage Amount.	Water.	Other Ash.	Sodium Chloride.	Protein.	Carbohydrate.	Fat.	Energy Value. Calories per—		
								100 gm.	1 oz.	1 lb.
Fat	18·4	1·5	0·4	—	0·90	—	15·09			
Lean	64·2	38·6	1·0	6·7	13·42	—	5·01			
Usual edible parts	82·6	40·1	1·4	6·7	14·32	—	20·10	245·6	69·6	1,114·0
Skin extract	6·7	—	—	—	0·28	—	0·34			
Bone extract	10·1	—	—	—	0·49	—	0·90			
All edible parts	99·4	—	—	—	15·09	—	21·34	260·3	73·8	1,180·7
Skin (waste)	6·7	—	—	—	1·79	—	0·88			
Marrow ,, ...	0·6	0·06	0·01	—	0·01	—	0·52			
Whole Gammon as purchased	100·0				16·89	—	22·74	280·7	79·6	1,273·3

HAM.

ANALYTICAL DATA CALCULATED ACCORDING TO PROPORTIONS OF PARTS.

—	Per-centage Amount.	Water.	Other Ash.	Sodium Chloride.	Protein.	Carbo-hydrate.	Fat.	Energy Value. Calories per—		
								100 gm.	1 oz.	1 lb.
Fat	39·8	2·8	0·4	—	1·35	—	34·83			
Lean	45·8	28·2	0·9	3·11	9·30	—	5·63			
Usual edible parts... ...	85·6	31·0	1·3	3·11	10·65	—	40·46	419·9	119·0	1,904·7
Skin extract	4·7	—	—	—	0·28	—	0·24			
Bone extract	9·3	—	—	—	0·59	—	0·33			
All edible parts	99·6	—	—	—	11·52	—	41·03	428·8	121·6	1,945·0
Skin, (waste)	4·7	—	—	—	0·88	—	0·82			
Marrow ,, ...	0·4	0·05	0·01	—	0·01	—	0·32			
Whole ham as purchased ...	100·0				12·41	—	42·17	443·1	125·6	2,009·9

TINNED MEATS.

ANALYTICAL DATA.

—	Water.	Other Ash.	Sodium Chloride.	Protein.	Carbohydrate.	Fat.	Energy Value. Calories per— 100 gm.	1 oz.	1 lb.
Preserved Meat	67·2	1·5	—	24·0	—	7·1	164·4	46·6	745·7
Beef Loaf, Pork added	64·3	1·1	2·1	17·6	5·0	9·9	184·7	52·4	837·8
Ham Loaf, Beef added	54·6	1·1	2·8	17·9	4·8	18·8	267·9	75·9	1,215·2
Pork Loaf, Beef added	56·4	1·1	2·8	18·4	3·9	17·4	253·2	71·8	1,148·5
Veal Loaf, Meat Products added	64·2	1·4	2·2	17·4	3·8	11·0	189·2	53·6	858·2
Roast Beef	62·9	2·9	—	27·3	—	7·5	181·7	51·5	824·2
Meat and Vegetable	70·8	1·8	—	11·7	8·2	7·5	151·3	42·9	686·3
	72·6	1·1	—	10·5	7·7	8·1	150·0	42·5	680·4
	68·6	1·3	—	11·5	9·4	9·2	171·3	48·6	777·0
	68·4	1·4	—	11·2	10·0	9·0	170·6	48·3	773·8
	71·7	1·6	—	10·8	8·7	7·2	146·9	41·6	666·3
	67·6	1·5	—	11·4	11·8	7·7	166·7	47·3	756·1
Tinned Pork and Beans	62·5	3·2	—	8·0	21·5	4·8	165·6	46·9	751·2

SAUSAGE.

Issued 9th August, 1918	53·5	1·2	1·2	11·2	15·2	17·7	272·9	77·4	1,237·9

EGGS.

(*A*)—Fresh.

Two hens' eggs and two ducks' eggs were procured for analysis. The hens' eggs were a brown-shelled one and a white-shelled one, and were rather larger than the average size. The average size of hens' eggs was determined from the weight of nine eggs purchased without selection.

The eggs were boiled before any determinations were made. The weights of the parts were then ascertained; subsequently the separate whites were combined, chopped as finely as possible and analysed. The yolks were treated in a similar way.

The results of the analyses of both the whites and the yolks show a deficit of between 1·4 and 2·1 per cent. This undetermined matter has been regarded as carbohydrate in calculating the energy value, *i.e.*, its amount has been multiplied by the usual 4·1 factor. Carbohydrates of the type of glucose have been described as being present in eggs.

The values for the whole egg, with and without shell, are calculated from the analytical data and the proportions of the constituents.

(*B*)—Dried.

Six different samples of dried eggs were purchased for analysis. On the average about 10 gm. of dried egg were sold for one fresh egg.

According to the figures obtained from fresh eggs weighing approximately 58 gm. each without shell, and containing 74 per cent. of water, one egg would give about 15 gm. of dried egg. Consequently, one dried egg as sold corresponds to about two-thirds of a fresh egg.

As would be expected, there is a larger amount of all the constituents and of the undetermined matter in dried eggs than in fresh eggs.

The undetermined matter has again been regarded as carbohydrate in calculating the energy value. (See note, p. 80.)

EGGS. (*A*)—FRESH.

PROPORTIONS OF PARTS.

	Gm.	Per-centage.		Gm.	Per-centage.			Per cent.		Per cent.
Hen's White-shelled—										
Shell	7	10·6	White ...	20	66·1					
White	39	59·1	Yolk ...	39	33·9					
Yolk	20	30·3								
Total	66	100·0	Total ...	59	100·0	Mean.	Shell ...	10·1	White ...	33·6
Hen's Brown-shelled—							White ...	59·7	Yolk ...	66·4
Shell	6	9·5	White ...	38	66·7		Yolk ...	30·2		
White	38	60·3	Yolk ...	19	33·3		Total ...	100·0	Total ...	100·0
Yolk	19	30·2								
Total	63	100·0	Total ...	57	100·0					

Mean weight 64·5 gm. = 2·3 oz.
Weight of 9 eggs = 502·2 gm. ∴ average weight of 1 egg = 55·8 gm. = 2 oz.

	Gm.	Per-centage.		Gm.	Per-centage.			Per cent.		Per cent.
Ducks' Eggs—										
Shell	8	10·6	White ...	38	56·7					
White	38	50·7	Yolk ...	29	43·3					
Yolk	29	38·7								
Total	75	100·0	Total ...	67	100·0	Mean.	Shell ...	11·1	White ...	57·4
							White ...	51·0	Yolk ...	42·6
Shell	8	11·5	White ...	36	58·1		Yolk ...	37·9		
White	36	51·4	Yolk ...	26	41·9		Total ...	100·0	Total ...	100·0
Yolk	26	37·1								
Total	70	100·0	Total ...	62	100·0					

EGGS. (*A*)—FRESH.

ANALYTICAL DATA.

—	Water.	Ash.	Protein.	Carbo-hydrate.	Fat.	Un-determined.	Total.	Energy Value. Calories per—		
								100 gm.	1 oz.	1 lb.
Hens' Eggs—										
White	87·2	0·6	10·7	—	0·10	1·40	100	50·5	14·3	229·1
Yolk	47·1	2·0	15·5	—	33·30	2·10	100	381·4	108·1	1,730·0
Ducks' Eggs—										
White	87·5	0·7	10·0	—	0·03	1·77	100	48·8	13·70	219·5
Yolk	45·1	1·5	15·3	—	36·50	1·60	100	408·7	115·9	1,853·9

EGGS. (*A*)—FRESH.

ANALYTICAL DATA CALCULATED ACCORDING TO PROPORTIONS OF PARTS.

—	Percentage Amount.	Water.	Ash.	Protein.	Carbohydrate.	Fat.	Undetermined.	Energy Value. Calories per—		
								100 gm.	1 oz.	1 lb.
(A) *Without Shell*—										
Hens' Eggs, White	66·4	57·9	0·4	7·1	—	0·07	0·93			
,, Yolk	33·6	15·8	0·7	5·2	—	11·19	0·71			
Whole	100·0	73·7	1·1	12·3	—	11·26	1·64	161·9	45·9	734·4
Ducks' Eggs, White	57·4	50·4	0·4	5·7	—	0·02	1·02			
,, Yolk	42·6	19·2	0·6	6·5	—	15·55	0·68			
Whole	100·0	69·6	1·0	12·2	—	15·57	1·70	201·8	57·2	915·4
(B) *With Shell*—										
Hens' Eggs, Shell	10·1	—	—	—	—	—	—			
,, White	59·7	52·1	0·4	6·4	—	0·06	0·80			
,, Yolk	30·2	14·2	0·6	4·7	—	10·06	0·60			
Whole	100·0	66·3	1·0	11·1	—	10·12	1·40	145·3	41·2	659·1
Ducks' Eggs, Shell	11·1	—	—	—	—	—	—			
,, White	51·0	44·6	0·4	5·1	—	0·01	0·90			
,, Yolk	37·9	17·1	0·6	5·8	—	13·83	0·61			
Whole	100·0	61·7	1·0	10·9	—	13·84	1·51	179·5	50·9	814·2

EGGS. (*B*)—DRIED.

ANALYTICAL DATA.

—	Water.	Ash.	Protein.	Carbo-hydrate.	Fat.	Un-determined.	Total.	Energy Value. Calories per—		
								100 gm.	1 oz.	1 lb.
Sample No. 1	6·1	4·1	42·3	—	39·0	8·5	100	571·0	161·9	2,590·0
" " 2	8·0	3·8	40·6	—	36·5	11·1	100	551·4	156·3	2,501·2
" " 3	4·6	4·4	36·7	—	45·5	8·8	100	609·7	172·8	2,765·6
" " 4	9·3	3·7	41·7	—	36·4	8·9	100	546·0	154·8	2,478·7
" " 5	5·8	3·8	41·4	—	41·0	8·0	100	583·8	165·5	2,648·1
" " 6	6·0	3·9	39·1	—	39·4	11·6	100	574·3	162·8	2,605·0
Mean	6·6	3·9	40·3	—	39·6	9·5	100	572·7	162·3	2,598·1

NOTE ON EGGS.

The Chemical Composition of Eggs and the Protein Factor.

Osborne and Campbell* have shown that egg-white contains four distinct proteins : Ovomucin (formerly globulin), ovalbumin (crystallisable), conalbumin and ovomucoid. Ovomucin forms about 7 per cent. of the protein matter. The three other proteins seem to be present in variable amounts, but in one case (allowing 7 per cent. for ovomucin) the proportions were 37 per cent. of ovalbumin, 34 per cent. of conalbumin and 22 per cent. of ovomucoid. These proteins were found to have the following percentages of nitrogen : Ovomucin, 14·7 ; ovalbumin, 15·5 ; conalbumin, 16·1 ; ovomucoid, 12·4. Only conalbumin, from its nitrogen content, can thus have a protein factor of 6·25 ($\frac{100}{16}$). The others have a higher factor. From the proportions given above, the total nitrogen of the protein matter works out at 14·87 per cent. The factor 6·7 would thus be required for the protein of egg-white. Using this factor instead of 6·25, the amount of protein in egg-white becomes 11·5 and 10·7 per cent. in fresh hens' egg and ducks' egg respectively. The amount of undetermined matter is reduced, but not eliminated. It probably consists of traces of carbohydrate and nitrogenous constituents of various kinds.

Egg-yolk contains vitellin as the chief protein. Another protein, livetin,† occurs in egg-yolk. Vitellin contains 15·19 per cent. of nitrogen ; livetin 14·99 per cent. The protein factors are thus 6·58 and 6·67 respectively. The amounts of each protein in egg-yolk are variable, but a mean factor of 6·62 could well be employed for calculating the amount of protein from the nitrogen content. Using this factor, the amount of protein becomes 16·4 and 16·3 per cent. in fresh hens' yolk and ducks' yolk respectively. Another protein has also been described.

Included in this figure for nitrogen is the nitrogen present in " Lecithin." There are very few data of the amount of lecithin in egg-yolk, and no correction can be made for this error. " Lecithin " is also included under fat.

Egg-yolk also contains carbohydrate, but it is not altogether justifiable to think that the whole of the undetermined matter is carbohydrate.

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* *J. Amer. Chem. Soc.*, 1900, **22**, 422.

† *Plimmer, J. Chem. Soc.*, 1908, **98**, 1500 .

Comparison of Fresh Eggs and Dried Eggs.

If the data for fresh eggs and dried eggs be calculated moisture free, the following figures result :—

—	Ash.	Protein.	Fat.	Undetermined.
Fresh Hens' Eggs ...	4·2	46·8	42·8	6·2
„ Ducks' Eggs ...	3·3	40·1	51·2	5·4
Dried Eggs, Sample No. 1	4·4	45·0	41·5	9·1
„ „ „ „ 2	4·1	44·1	39·7	12·1
„ „ „ „ 3	4·6	38·5	47·7	9·2
„ „ „ „ 4	4·1	46·0	40·1	9·8
„ „ „ „ 5	4·0	43·9	43·5	8·6
„ „ „ „ 6	4·1	41·6	41·9	12·4

They show that the commercial dried egg contains a greater amount of undetermined matter than fresh eggs. The dried eggs contain no addition of foreign carbohydrate. A possible explanation for this greater amount of undetermined matter is that the eggs used in making commercial dried eggs are not absolutely fresh, *i.e.*, have been kept for a time after laying by the hen. As a result of keeping, these eggs may undergo metabolic changes consisting in the de-amination of the protein. On drying, the ammonia so produced would be lost and a non-nitrogenous constituent remain. This constituent would raise the amount of undetermined matter. It is proposed to test this supposition. (See also note under cheese.)

MILK.

(1) Fresh.

Owing to the difficulty of obtaining proper samples of milk, it is best to employ those data for milk, which have been agreed to by various analytical chemists, as representing its true composition, namely :—

Water.	Ash.	Protein.	Carbo-hydrate (Lactose)	Fat.	Energy Value. Calories per—		
					100 gm.	1 oz.	1 lb.
87·6	0·7	3·3	4·8	3·6	66·8	18·9	303·0

(2) Dried.

A few analyses of dried milk were made. Dried milk may be the product of whole milk, or of skim milk. The smaller fat content of the latter is shown in the analytical data.

MILK. DRIED.

ANALYTICAL DATA.

—	Water.	Ash.	Protein.	Carbo-hydrate. (Lactose)	Fat.	Un-deter-mined.	Energy Value. Calories per—		
							100 gm.	1 oz.	1 lb.
Sample No. 1...	4·2	6·8	28·8	41·0	12·9	6·3	406·2	115·2	1,842·5
" " 2...	6·3	5·7	23·7	35·9	24·9	3·5	475·9	134·9	2,158·7
" " 3...	4·2	6·0	25·2	34·3	23·4	6·9	461·6	130·9	2,093·8
" " 4...	4·7	5·8	24·2	49·0	11·2	5·1	404·3	114·6	1,833·9

CHEESE.

Cheese may be divided into several groups :—

A. Soft cheeses, in which the whey is not completely pressed out.
B. Hard cheeses, made from *full milk,* in which the whey is pressed out more completely.
C. Hard cheeses, made from *skim milk,* in which the whey is pressed out more completely.
D. Hard cheese, made from *full milk,* but with *added cream.*
E. Extra hard cheeses which have been specially treated so as to squeeze out as much whey as possible.

The analyses distinctly show to which class they belong.

In all cases the analyses show that there is a considerable amount of matter not included as protein or fat. This amount is generally either neglected or returned as carbohydrate (lactose). A consideration of the method of cheese making, in which the milk is exposed to the air, which abounds in lactic acid bacteria, must lead to the conclusion that the lactose will be fermented away. Such high figures as 11 and 12 per cent. in the case of Caerphilly are opposed to the view of the presence of lactose in cheese. This amount is nearly three times the amount of lactose in milk ; and liquid is removed in cheese making. All the cheeses have been carefully tested for reducing material (lactose). It was found to be absent in all cases except Dorsella ; here traces of reducing matter, probably lactose, were present. This cheese is a fresh cheese made in a different way to the ordinary cheese, and this would account for the presence of traces of lactose. Further consideration as to the nature of this undetermined matter leads to the conclusion that, in the process of cheese making, part of the protein is hydrolysed by the bacteria, and on further action of the bacteria the amino acids so formed lose nitrogen, *i.e.*, undergo de-amination. Investigators have found ammonia and other bases in cheese, and if a piece of cheese be ground up and smelt, there is always a distinct smell of ammonia and bases. The product resulting from the de-amination of amino acids may be a fatty acid, or a hydroxy acid, and its calorie value would be approximately equivalent to that of protein or carbohydrate. The undetermined matter has been reckoned as carbohydrate in calculating the energy value.

CHEESE.

ANALYTICAL DATA.

Variety.	Water.	Other Ash.	Sodium Chloride.	Protein.	Fat.	Un-determined.	Energy Value. Calories per—		
							100 gm.	1 oz.	1 lb.
A. *Soft*—									
Little Wilts	40·4	1·5	1·9	22·0	32·3	1·9	398·4	112·9	1,807·1
Sample No. 1	48·0	2·1	1·5	21·9	24·7	1·8	326·9	92·7	1,482·8
,, ,, 2	34·8	2·4	0·9	22·3	33·9	5·7	430·1	121·9	1,950·9
Mean	41·1	2·0	1·4	22·1	30·3	3·1	385·1	109·2	1,746·8
B. *Hard* (*Full Milk*)—									
English Cheddar	33·7	2·6	1·8	25·2	33·4	3·3	427·5	121·2	1,939·1
Government ,,	28·6	2·4	1·8	27·6	38·3	1·3	474·7	134·6	2,153·2
Army ,,	35·9	2·6	1·6	24·9	30·3	4·7	403·2	114·3	1,828·9
,, ,,	30·8	2·4	1·8	24·6	37·3	3·1	460·5	130·6	2,088·9
Cheshire	34·9	2·8	2·1	22·7	33·8	3·7	422·6	119·8	1,916·9
Gloucester	30·9	2·7	1·6	25·6	36·6	2·6	456·0	129·3	2,068·4
Wensleydale	26·3	3·1	3·1	29·2	35·1	3·2	459·3	130·2	2,083·4
Mean	31·6	2·7	2·0	25·7	35·0	3·1	443·4	125·7	2,011·3
C. *Hard* (*Skim Milk*)—									
Blue Dorset	33·7	2·8	2·6	41·9	14·4	4·6	324·6	92·0	1,472·4
Caerphilly	43·0	3·1	2·1	27·2	13·4	11·2	282·1	80·0	1,279·6
,,	47·7	3·4	1·9	27·6	7·0	12·4	229·1	64·9	1,039·2
Mean	41·5	3·1	2·2	32·2	11·6	9·4	278·6	79·0	1,260·4
D. *Hard* (+ *added Cream*)—									
Stilton	24·6	1·4	2·4	26·3	42·8	2·5	516·1	146·3	2,341·0
E. *Extra Hard*—									
Parmesan (Argentine)	26·4	4·0	2·6	33·7	34·9	4·4	480·8	136·3	2,180·9

BUTTER, MARGARINE, DRIPPING, LARD.

As is well known, these foodstuffs consist essentially of fat and their energy value is entirely due to this constituent. The amount of protein present in butter and margarine is a negligible quantity. Butter and margarine have a lower energy value than dripping and lard, owing to their content of water and salt. It is owing to the variability in amount of these two constituents that there are differences in the proportion of fat.

The important factor of the presence of fat-soluble A in these fats should not be neglected. The absence of this substance from the diet appears to be the cause of rickets. Butter contains this unknown substance ; lard does not contain it ; dripping does not appear to have been tested, but owing to the stability of this unknown factor to heat, fat-soluble A is probably present.

Three types of margarine can be purchased on the market, one made from vegetable fats, another entirely from animal fats, and the third from a mixture of animal and vegetable fats. The margarine made from vegetable fats is usually the cheapest product. The vegetable fats derived from seeds, as used in margarine making, do not contain fat-soluble A, and hence this type of margarine is deficient in accessory factor. The other type, to which the olein fraction of animal fat is frequently added to make the consistency nearer that of butter, will be comparatively rich in fat-soluble A.

Numerous varieties of margarine are now on the market, but without adequate knowledge of their manufacture, a fair statement as to the presence or absence of fat-soluble A is not possible. It is to be hoped that the manufacturers are taking notice of the scientific data concerning fat-soluble A, as only in this way can a margarine be made equal to butter as a foodstuff. Further details concerning Accessory Food Factors will be found in the Report of the Medical Research Committee of 1919.

FATS: BUTTER, MARGARINE, DRIPPING, LARD.

ANALYTICAL DATA.

—	Water.	Sodium Chloride.	Other Ash.	Un-determined.	Protein.	Carbo-hydrate.	Fat.	Energy Value. Calories per—		
								100 gm.	1 oz.	1 lb.
Butter										
Cornish	13·8	2·3	—	2·3	—	—	81·6	758·9	215·2	3,442·4
Fresh Scotch	13·9	0·2	0·2	0·5	0·4	—	84·3	785·6	222·7	3,563·5
Mean	—	—	—	—	—	—	—	772·2	218·9	3,502·9
Margarine—										
Sample No. 1	13·6	1·7	—	0·9	—	—	84·3	784·0	221·3	3,556·2
,, ,, 2	13·5	2·0	—	2·5	—	—	82·8	770·0	218·3	3,492·7
,, ,, 3	11·6	0·0	0·0	0·2	0·1	—	87·7	816·0	231·3	3,701·4
,, ,, 4	13·1	1·1	1·2	—	0·1	—	84·1	782·5	221·8	3,549·4
,, ,, 5	11·9	1·3	0·3	0·5	0·3	—	85·3	794·5	225·2	3,603·9
,, ,, 6	14·7	1·4	0·5	—	0·3	—	83·9	781·5	221·6	3,544·9
,, ,, 7	12·6	1·2	0·3	0·1	0·3	—	85·3	794·5	225·2	3,603·9
Mean	—	—	—	—	0·2	—	84·8	789·0	223·5	3,578·9
Dripping	—	—	—	—	—	—	100·0	930·0	263·7	4,218·5
Lard	—	—	—	—	—	—	100·0	930·0	263·7	4,218·5

POULTRY AND GAME.

Except chicken and rabbit, the birds and animals used were purchased on the market. The chicken and rabbit were frozen articles from those supplied for the Army. The chicken was a "war" specimen, the rabbit an average properly nourished animal. Only two joints of venison were taken for analysis, as it was not desired to get more than a comparison of deer flesh with other flesh.

The bird or animal was separated into its several parts, each part being weighed so as to ascertain its proportion to the whole. For comparison the proportions are shown in pairs in the following tables. During the dissection a certain quantity of water is lost by evaporation. This has not been determined, on account of its variability, depending on the temperature of the room, rate of dissection and other minor factors. The total weight is that of the addition of the separate parts ; these were weighed as soon as the dissection was completed.

The chemical analysis of the several parts was carried out as soon as the several parts were separated and minced, so as to avoid further loss of water by evaporation. Bones and carcase, sometimes also head and neck, were extracted together with boiling water and the extract analysed ; in other cases the head and neck were boiled in water separately, the meat scraped off and analysed, and also the extract.

From the analytical data and the proportions, the values for the muscle, offal and whole bird or animal are calculated.

Just as was found with beef, mutton, etc., the analytical data do not as a rule total 100. The difference, as before, is to be attributed mainly to the difficulty of procuring proper samples ; the tissues are tough, and not capable of fine disintegration by a small mincer, even after passing through the machine two or three times. Only the heart and liver have been assumed to contain carbohydrate (glycogen) ; we are not justified in thinking that the difference in the other organs is due to carbohydrate. Scarcely any analyses of glycogen have been made in these animals.

Very few analyses of rabbit appear in the text books. These data lead to the conclusion that the data quoted by König are for the animal including offal, and those by McKillop for the flesh only.

The analytical data for tinned rabbit are included for comparison. Only one specimen of each animal or bird (except pigeon) was analysed. All data will be variable, as they depend on the condition of the animal or bird at the time of its use for food—whether it is fattened or not fattened ; the values now determined do not deviate greatly from other values.

POULTRY AND GAME.

Proportions of Parts.

—	*Frozen Chicken.*				*Turkey.*			
	Gm.		Per cent.		Gm.		Per cent.	
Muscle—								
Back	32		2·6		71		2·5	
Breast	145		11·9		638		22·3	
Leg	202		16·5		447		15·6	
Wing	48		3·9		143		5·0	
Skin	75		6·1		195		6·8	
		502		41·0		1494		52·2
Brain	—		—		—		—	
Comb	8		0·7		—		—	
Gizzard	22		1·8		118		4·1	
Heart	12		1·0		20		0·7	
Kidneys	2		0·2		15		0·5	
Liver	20		1·6		55		1·9	
Lungs	13		1·1		13		0·5	
		77		6·4		221		7·7
Leg Bones	60		4·9		148		5·2	
Wing Bones ..	42		3·4		100		3·4	
		102		8·3		248		8·6
Head and Neck	546	546	44·5	44·5	211	211	7·3	7·3
Carcase					364	364	12·7	12·7
Intestines					215		7·5	
Feet					116	331	4·0	11·5
Total		1227		100·2		2869		100·0

POULTRY AND GAME.

PROPORTIONS OF PARTS.

—	*Duck.*				*Goose.*			
	Gm.		Per cent.		Gm.		Per cent.	
Muscle—								
Back	24		1·1		48		1·3	
Breast	280		13·0		470		13·1	
Leg	174		8·1		372		10·4	
Wing	107		5·0		238		6·6	
Skin	702		32·7		470		13·1	
Brain	5	1287	0·2	59·9	11	1598	0·3	44·5
Fat	114		5·3		350		9·8	
Gizzard	63		2·9		165		4·6	
Heart	16		0·7		28		0·8	
Kidneys	9		0·4		19		0·5	
Liver	26		1·2		71		2·0	
Lungs	8		0·4		29		0·8	
		241		11·1		673		18·8
*Head and Neck ..	205		9·5		221		6·2	
		205		9·5		221		6·2
Carcase and Feet ..	198		9·2		355		9·9	
Leg Bones	29		1·4		75		2·1	
Wing ,, ...	39		1·8		114		3·2	
		226		12·4		544		15·2
Feathers	11		0·5		48		1·3	
Intestines	139		6·5		500		13·9	
		150		7·0		548		15·2
Total		2149		99·9		3584		99·9

* *Head and Neck* after boiling in water :—

	Duck Gm.	Duck Per cent.	Goose Gm.	Goose Per cent.
Bones	91	64·5	131	59·8
Meat	50	35·5	88	40·2
Total	141	100·0	219	100·0

POULTRY AND GAME.

PROPORTIONS OF PARTS.

Two Pigeons.

—	No. 1. — Gm.		No. 2. — Gm.		No. 1. — Per cent.		No. 2. — Per cent.		Mean. — Per cent.
Muscle—									
Back ..	3		3		0·8		1·0		0·9
Breast ..	84		72		22·0		23·4		22·7
Leg ..	23		20		6·0		6·5		6·3
Wing ..	30		23		7·9		7·5		7·7
Skin ..	25		22		6·5		7·1		6·8
		165		140		43·2		45·5	44·4
Brain ..	2		1		0·5		0·3		0·4
Gizzard ..	14		12		3·7		3·9		3·8
Heart ..	6		4		1·6		1·3		1·4
Kidneys ..	4		2		1·0		0·6		0·8
Liver ..	14		10		3·6		3·2		3·4
Lungs ..	6		5		1·6		1·6		1·6
		46		34		12·0		10·9	11·4
Head and Neck	23		18		6·0		5·8		5·9
		23		18					
Carcase ..	29		25		7·6		8·1		7·9
Wing Bones ..	6		5		1·6		1·6		1·6
Leg Bones ..	15		11		3·9		3·7		3·8
		50		41		19·1		19·2	19·2
Feathers ..	35		30		9·2		9·7		9·4
Feet	8		7		2·1		2·3		2·2
Intestines ..	55		38		14·4		12·4		13·4
		98		75		25·7		24·4	25·0
Total ..		382		308		100·0		100·0	100·0

POULTRY AND GAME.

Proportions of Parts.

—	Grouse.				Wild Duck.			
	Gm.		Per cent.		Gm.		Per cent.	
Muscle—								
Back	10		2·3		7		1·0	
Breast	121		27·9		168		23·6	
Leg	25		5·8		39		5·5	
Wing	15		3·5		46		6·4	
Skin	32		7·3		72		10·1	
		203		46·8		332		46·6
Brain	—		—		4		0·6	
Gizzard	16		3·7		45		6·3	
Heart	7		1·6		9		1·3	
Kidneys	2		0·5		9		1·3	
Liver	11		2·5		17		2·4	
Lungs	3		0·7		11		1·5	
		39		9·0		95		13·4
Head and Neck	—		—		43		6·0	
						43		6·0
Leg Bones					8		1·1	
Wing Bones	77		17·7		15		2·1	
Carcase					68		9·5	
		77		17·7		91		12·7
Intestines	115		26·5		136		19·1	
Feathers	—		—		16		2·2	
		115		26·5		152		21·3
Total		434		100·0		713		100·0

POULTRY AND GAME.

Proportions of Parts.

—	*Partridge.*				*Pheasant.*			
	Gm.		Per cent.		Gm.		Per cent.	
Muscle—								
Back	11·0		3·1		32		3·6	
Breast	97·0		27·2		247		27·7	
Leg	42·0		11·8		144		16·2	
Wing	9·5		2·7		53		5·9	
Skin	21·0		5·9		65		7·3	
		180·5		50·7		541		60·7
Brain	—		—		4		0·4	
Fat	—		—		12		1·3	
Gizzard	12·5		3·5		18		2·0	
Heart	2·5		0·7		5		0·6	
Kidneys	—		—		5		0·6	
Liver	8·5		2·5		17		1·9	
Lungs	4·0		1·1		6		0·7	
		27·5		7·8		67		7·5
Head and Neck }	60·0		16·8		47	47	5·3	5·3
Carcase .. }					37		4·2	
Leg Bones	12·0		3·3		22		2·5	
Wing Bones ..	9·0		2·5		28		3·1	
		81·0		22·6		87		9·8
Feathers	35·5		9·9		18		2·0	
Feet	—		—		36		4·0	
Intestines	32·5		9·1		95		10·7	
		68·0		19·0		149		16·7
Total		357·0		100·1		891		100·0

Head and Neck after boiling in water :—

	Partridge Gm.	Partridge Per cent.	Pheasant Gm.	Pheasant Per cent.
Meat	—	—	19	43·2
Bones	—	—	25	56·8
			44	100·0

POULTRY AND GAME.

Proportions of Parts.

—	*Hare* (*Scotch*).				*Rabbit* (*Frozen*).			
	Gm.		Per cent.		Gm.		Per cent.	
***Muscle*—**								
Back	283		12·1		98		7·3	
Flank	44		1·9		217		16·2	
Foreleg and Shoulder	142		6·1		230		17·2	
Hindleg	424		18·2		102		7·6	
		893		38·3		647		48·3
Brain	12		0·5		7		0·5	
Heart	27		1·2		4		0·3	
Kidneys	14		0·6		9		0·7	
Liver	60		2·6		28		2·1	
Lungs	38		1·6		12		0·9	
Suet	4		0·2		13		1·0	
		155		6·7		73		5·5
Bones, Foreleg ..	30		1·3		270		20·2	
„ Hindleg ..	61		2·6					
Carcase, Head and Neck	285		12·2					
		376		16·1		270		20·2
Intestines	535		23·0		—		—	
Skin	264		11·3		262		19·6	
Water	107		4·6		85		6·4	
		906		38·9		357		26·0
Total		2330		100·0		1337		100·0

POULTRY AND GAME.

FROZEN CHICKEN.

Analytical Data.

	Water.	Ash.	Sodium Chloride.	Protein.	Carbohydrate by Diff.	Fat.	Total.	Energy Value. Calories per—		
								100 gm.	1 oz.	1 lb.
Muscle—										
Back	73·0	1·3	0·2	23·3	—	2·0	99·8	114·1	32·4	517·6
Breast	74·0	1·2	0·2	24·6	—	0·2	100·2	102·7	29·1	465·8
Leg	72·2	1·2	0·2	22·9	—	2·5	99·0	117·1	33·2	531·2
Wing	72·5	1·3	0·3	23·4	—	1·0	98·5	105·2	29·9	479·2
Skin	56·6	1·1	—	30·8	—	13·6	102·1	252·8	71·7	1,146·7
Brain*	83·8	1·4	—	9·1	—	5·1	99·4	84·7	24·0	384·2
Comb	54·7	2·1	—	30·8	—	3·2	90·8	156·0	44·2	707·6
Gizzard	69·7	1·3	—	21·5	—	6·1	98·6	144·9	41·1	657·3
Heart	67·1	1·2	—	20·3	2·9	8·5	100·0	174·2	49·4	790·2
Kidneys	73·9	1·4	—	17·6	—	5·1	98·0	119·6	33·9	542·5
Liver	69·9	1·6	—	21·8	2·9	3·8	100·0	136·6	38·7	619·6
Lungs	79·3	1·4	—	16·7	—	2·0	99·4	87·1	24·7	395·1
Carcase, head, neck, bones, extract	—	—	—	1·9	—	2·5	to 100	31·0	8·8	140·6

* From another bird (3·5 gm. in weight).

POULTRY AND GAME.

FROZEN CHICKEN.

Analytical Data Calculated according to Proportions of Parts.

—	Percentage Amount.	Water.	Ash.	Sodium Chloride.	Protein.	Carbohydrate.	Fat.	Energy Value. Calories per— 100 gm.	1 oz.	1 lb.
Muscle—										
Back	2·6	1·9	0·03	0·01	0·61	—	0·05			
Breast	11·9	8·8	0·14	0·02	2·93	—	0·02			
Leg	16·5	11·9	0·20	0·03	3·78	—	0·41			
Wing	3·9	2·8	0·05	0·01	0·91	—	0·04			
Skin	6·1	3·7	0·07	—	1·88	—	0·83			
All muscle	41·0	29·1	0·49	0·07	10·11	—	1·35	54·0	15·3	244·9
Comb	0·7	0·4	0·01	—	0·22	—	0·02			
Gizzard	1·8	1·3	0·02	—	0·39	—	0·11			
Heart	1·0	0·7	0·01	—	0·20	0·03	0·09			
Kidneys	0·2	0·2	0·00	—	0·04	—	0·01			
Liver	1·6	1·1	0·03	—	0·35	0·05	0·06			
Lungs	1·1	0·9	0·01	—	0·18	—	0·02			
All offal	6·4	4·6	0·08	—	1·38	0·08	0·31	8·9	2·5	40·4
Carcase, &c.	52·8	—	—	—	1·00	—	1·32	16·4	4·7	74·4
Whole bird	100·2	33·7	0·57	0·07	12·49	0·08	2·98	79·3	22·5	359·7

POULTRY AND GAME.

DUCK.

Analytical Data.

—	Water.	Ash.	Sodium Chloride.	Protein.	Carbohydrate by Diff.	Fat.	Total.	Energy Value. Calories per— 100 gm.	1 oz.	1 lb.
Muscle—										
Back	61·8	1·1	0·1	20·3	—	16·0	99·3	232·0	65·8	1,052·3
Breast	71·3	1·3	0·1	22·3	—	4·6	99·6	134·2	38·0	608·7
Leg	67·1	1·1	0·1	20·1	—	11·4	99·8	188·4	53·4	854·6
Wing	66·6	1·1	0·1	21·2	—	10·5	99·5	184·6	52·3	837·3
Skin...	9·8	0·2	—	4·5	—	84·7	99·2	806·2	228·6	3,656·9
Brain	79·6	1·2	—	12·1	—	6·8	99·7	112·9	32·0	512·1
Fat	6·1	0·1	—	1·5	—	93·6	101·3	876·6	248·5	3,976·3
Gizzard	73·3	1·1	0·2	21·3	—	3·7	99·6	121·7	34·5	552·0
Heart	63·7	0·9	0·1	15·0	0·7	19·6	100·0	246·7	69·9	1,119·0
Kidneys	61·2	1·2	0·1	16·7	—	20·8	100·0	261·9	74·2	1,188·0
Liver	68·6	1·7	0·1	21·6	3·1	4·9	100·0	146·8	41·6	665·9
Lungs	67·0	1·6	0·1	25·9	—	4·5	99·1	148·0	42·0	671·3
After boiling—										
Head and neck: meat... ...	61·3	0·8	—	28·4	—	9·8	100·3	207·6	30·5	488·1
,, extract ...	—	—	—	0·6	—	0·5	to 100	7·1	2·0	32·2
Carcase and bones: extract ...	—	—	—	2·0	—	12·0	to 100	119·8	34·0	543·4

POULTRY AND GAME.

DUCK.

Analytical Data Calculated according to Proportions of Parts.

—	Percentage Amount.	Water.	Ash.	Sodium Chloride.	Protein.	Carbohydrate.	Fat.	Energy Value. Calories per—		
								100 gm.	1 oz.	1 lb.
Muscle—										
Back	1·1	0·7	0·01	0·00	0·22	—	0·18			
Breast	13·0	9·3	0·17	0·01	2·89	—	0·60			
Leg	8·1	5·4	0·09	0·01	1·63	—	0·92			
Wing	5·0	3·3	0·06	0·01	1·06	—	0·53			
Skin...	32·7	3·2	0·06	—	1·47	—	27·7			
All muscle	59·9	21·9	0·39	0·03	7·27	—	29·93	308·2	87·4	1,398·0
Brain	0·2	0·2	0·00	—	0·02	—	0·01			
Fat	5·3	0·3	0·00	—	0·08	—	4·96			
Gizzard	2·9	2·1	0·03	0·01	0·62	—	0·11			
Heart	0·7	0·5	0·01	0·00	0·11	0·01	0·14			
Kidneys	0·4	0·2	0·01	0·00	0·07	—	0·08			
Liver	1·2	0·8	0·02	0·00	0·26	0·04	0·06			
Lungs	0·4	0·3	0·01	0·00	0·10	—	0·02			
All offal	11·1	4·4	0·08	0·01	1·26	0·05	5·38	55·4	15·7	251·3

*Head and neck : meat and extract	9·5	—	—	—	1·00	—	0·36	7·5	2·1	34·0
Carcase and bones : extract ...	12·4	—	—	—	0·25	—	1·49	14·9	4·2	67·6
Waste	7·0	—	—	—	—	—	—	—	—	—
Whole bird...	99·9	—	—	—	9·78	0·05	37·16	386·0	109·4	1,750·9
*Head and neck—										
Meat	35·5	21·8	0·28	—	10·1	—	3·48			
Extract	64·5	—	—	—	0·4	—	0·32			
	100·0	21·8	0·28	—	10·5	—	3·80			

GOOSE.

ANALYTICAL DATA.

—	Water.	Ash.	Sodium Chloride.	Protein.	Carbo-hydrate by Diff.	Fat.	Total.	Energy Value. Calories per—		
								100 gm.	1 oz.	1 lb.
Muscle—										
Back	67·1	1·1	0·2	21·0	—	9·8	99·2	177·2	50·2	803·8
Breast	69·3	1·1	0·2	22·7	—	5·4	98·7	143·3	40·6	650·0
Leg	66·3	1·0	0·1	20·9	—	10·3	98·6	181·5	51·5	823·3
Wing	69·6	1·1	0·1	24·1	—	5·1	100·0	146·2	41·4	663·2
Skin...	17·7	0·4	0·0	8·8	—	72·4	99·3	709·4	201·1	3,217·8
Brain	81·1	1·2	—	10·9	—	5·6	98·8	96·8	27·4	439·1
Fat	5·2	0·1	—	0·9	—	94·6	100·7	883·5	250·5	4,007·6
Gizzard	72·1	0·9	0·3	23·2	—	4·8	101·3	139·8	39·6	634·1
Heart	62·6	1·0	0·2	19·9	4·2	12·1	100·0	211·3	59·9	958·5
Kidneys	61·6	1·2	0·3	17·1	—	19·9	100·1	255·3	72·4	1,158·0
Liver	71·2	1·1	0·2	16·4	7·0	4·1	100·0	134·1	38·0	608·3
Lungs	75·0	1·2	0·1	19·1	—	2·4	97·8	100·6	28·5	456·3
After boiling—										
Head and neck: meat	67·4	0·7	—	21·7	—	8·1	97·9	164·3	46·6	745·3
,, extract ...	—	—	—	1·4	—	0·1	to 100	6·7	1·9	30·4
Carcase and bones: extract ...	—	—	—	2·8	—	3·1	to 100	40·3	11·4	182·8

POULTRY AND GAME.

GOOSE.

Analytical Data Calculated according to Proportions of Parts.

—	Percentage Amount.	Water.	Ash.	Sodium Chloride.	Protein.	Carbohydrate.	Fat.	Energy Value. Calories per—		
								100 gm.	1 oz.	1 lb.
Muscle—										
Back	1·3	0·9	0·01	0·00	0·27	—	0·13			
Breast	13·1	9·1	0·14	0·03	2·97	—	0·71			
Leg	10·4	6·9	0·10	0·01	2·17	—	1·07			
Wing	6·6	4·6	0·07	0·01	1·59	—	0·34			
Skin...	13·1	2·3	0·05	0·00	1·15	—	9·48			
All muscle	44·5	23·8	0·37	0·05	8·15	—	11·73	142·5	40·4	646·4
Brain	0·3	0·2	0·00	—	0·03	—	0·02			
Fat ...	9·8	0·5	0·01	—	0·09	—	9·27			
Gizzard	4·6	3·3	0·04	0·01	1·07	—	0·22			
Heart	0·8	0·5	0·00	0·00	0·16	0·03	0·10			
Kidneys	0·5	0·3	0·01	0·00	0·09	—	0·10			
Liver	2·0	1·4	0·02	0·00	0·33	0·14	0·08			
Lungs	0·8	0·6	0·01	0·00	0·15	—	0·02			
All offal	18·8	6·8	0·11	0·01	1·92	0·17	9·81	99·8	28·3	452·7

GOOSE.

Analytical Data Calculated according to Proportions of Parts—*continued.*

—	Per-centage Amount.	Water.	Ash.	Sodium Chloride.	Protein.	Carbo-hydrate.	Fat.	Energy Value. Calories per—		
								100 gm.	1 oz.	1 lb.
*Head and neck: meat and extract	6·2	—	—	—	0·59	—	0·21	4·4	1·3	20·0
Carcase and bones: extract ...	13·1	—	—	—	0·37	—	0·41	5·3	1·5	24·0
Waste	17·3	—	—	—	—	—	—	—	—	—
Whole bird...	99·9	—	—	—	11·03	0·17	22·16	252·0	71·5	1,143·1
**Head and neck—*										
Meat	40·2	27·1	0·28	—	8·7	—	3·26			
Extract	59·8	—	—	—	0·8	—	0·06			
	—	—	—	—	9·5	—	3·32			

POULTRY AND GAME.

TWO PIGEONS.

ANALYTICAL DATA.

—	Water.	Ash.	Sodium Chloride.	Protein.	Carbohydrate by Diff.	Fat.	Total.	Energy Value. Calories per—		
								100 gm.	1 oz.	1 lb.
Muscle—										
Back	62·3	1·5	0·1	30·9	—	5·7	100·5	179·7	50·9	815·1
Breast	71·5	1·4	0·1	22·1	—	3·6	98·7	124·1	35·2	562·9
Leg	69·2	1·3	0·1	22·1	—	6·6	99·3	152·0	43·1	689·5
Wing	67·6	1·4	0·1	25·4	—	5·8	100·3	158·1	44·8	717·1
Skin...	45·9	0·9	0·1	18·7	—	34·6	100·2	398·5	106·7	1,707·6
Brain	77·3	1·4	—	13·2	—	7·9	99·8	127·6	36·2	578·8
Gizzard	71·6	1·1	0·2	20·4	—	6·8	100·1	146·9	41·6	666·3
Heart	73·8	1·1	0·3	18·3	0·6	5·9	100·0	132·4	37·5	600·6
Kidneys	75·8	1·3	—	18·0	—	3·3	98·4	104·5	29·6	474·0
Liver	73·9	1·5	0·4	19·5	2·3	2·4	100·0	111·7	31·7	506·7
Lungs	75·5	1·1	—	19·6	—	2·0	98·2	99·0	28·1	449·1
Head and neck: carcase and bones extract	—	—	—	2·2	—	2·8	to 100	35·1	10·0	159·2

POULTRY AND GAME.

TWO PIGEONS.

Analytical Data Calculated according to Proportions of Parts.

—	Percentage Amount.	Water.	Ash.	Sodium Chloride.	Protein.	Carbohydrate.	Fat.	Energy Value. Calories per— 100 gm.	1 oz.	1 lb.
Muscle—										
Back	0·9	0·6	0·01	—	0·28	—	0·05			
Breast	22·7	16·2	0·32	0·02	5·02	—	0·82			
Leg	6·3	4·4	0·08	0·01	1·39	—	0·42			
Wing	7·7	5·2	0·11	0·01	1·96	—	0·45			
Skin...	6·8	3·1	0·06	0·01	1·27	—	2·35			
All muscle	44·4	29·5	0·58	0·05	9·92	—	4·09	78·7	22·3	357·0
Brain	0·4	0·3	0·01	—	0·05	—	0·03			
Gizzard	3·8	2·7	0·04	0·01	0·77	—	0·26			
Heart	1·4	1·0	0·01	0·00	0·26	0·01	0·08			
Kidneys	0·8	0·6	0·01	—	0·14	—	0·03			
Liver	3·4	2·5	0·05	0·01	0·66	0·08	0·08			
Lungs	1·6	1·2	0·02	—	0·31	—	0·03			
All offal	11·4	8·3	0·14	0·02	2·19	0·09	0·51	14·1	4·0	64·0
Head, neck and bones: extract ...	19·2	—	—	—	0·42	—	0·54	6·7	1·9	30·4
Waste	25·0	—	—	—	—	—	—	—	—	—
Whole bird...	100·0	—	—	—	12·53	0·09	5·14	99·5	28·2	451·4

POULTRY AND GAME.

TURKEY.

ANALYTICAL DATA.

—	Water.	Ash.	Sodium Chloride.	Protein.	Carbo-hydrate by Diff.	Fat.	Total.	Energy Value. Calories per—		
								100 gm.	1 oz.	1 lb.
Muscle—										
Back	69·1	1·1	0·2	21·6	—	6·5	98·5	149·0	42·4	675·9
Breast	71·8	1·1	0·1	23·2	—	2·1	98·3	114·7	32·5	520·3
Leg	71·3	1·0	0·1	22·4	—	7·0	101·8	156·9	44·5	711·7
Wing	66·5	1·0	0·2	25·6	—	7·4	100·7	173·8	49·3	788·4
Skin...	49·9	0·7	0·1	19·0	—	28·4	98·1	342·0	97·0	1,551·3
Gizzard	70·5	1·0	0·2	20·4	—	6·7	98·8	145·9	41·3	661·8
Heart	71·0	1·2	0·2	15·7	—	12·2	100·3	177·8	50·4	806·5
Kidneys	74·5	1·0	0·2	18·6	—	5·3	99·6	125·6	35·6	569·7
Liver	72·2	1·5	0·2	21·1	0·7	4·3	100·0	129·4	36·7	587·0
Lungs	72·4	1·4	0·3	22·3	—	2·7	99·1	116·5	33·0	528·4
After boiling—										
Head and neck: meat... ...	71·2	0·5	—	20·8	—	7·1	99·6	151·3	42·9	686·3
" extract ...	—	—	—	3·3	—	0·1	to 100	14·5	4·1	65·8
Carcase and bones: extract ...	—	—	—	5·5	—	3·8	to 100	57·9	16·4	262·6

POULTRY AND GAME.

TURKEY.

ANALYTICAL DATA CALCULATED ACCORDING TO PROPORTIONS OF PARTS.

—	Percentage Amount.	Water.	Ash.	Sodium Chloride.	Protein.	Carbohydrate.	Fat.	Energy Value. Calories per—		
								100 gm.	1 oz.	1 lb.
Muscle—										
Back	2·5	1·7	0·03	0·01	0·54	—	0·16			
Breast	22·3	16·0	0·24	0·02	5·17	—	0·47			
Leg	15·6	11·1	0·16	0·02	3·49	—	1·09			
Wing.	5·0	3·3	0·05	0·01	1·28	—	0·37			
Skin...	6·8	3·4	0·05	0·01	1·29	—	1·93			
All muscle	52·2	35·5	0·53	0·07	11·77	—	4·02	85·6	24·3	388·3
Gizzard	4·1	2·9	0·04	0·01	0·84	—	0·28			
Heart	0·7	0·5	0·01	0·00	0·11	—	0·08			
Kidneys	0·5	0·4	0·01	0·0	0·09	—	0·03			
Liver	1·9	1·4	0·03	0·00	0·40	0·01	0·08			
Lungs	0·5	0·4	0·01	0·00	0·11	—	0·01			
All offal	7·7	5·6	0·10	0·01	1·55	0·01	0·48	10·9	3·1	49·4

*Head and neck: meat and extract	7·3	—	—	—	1·13	—	0·36	8·0	2·3	36·3
Carcase and bones: extract ...	21·3	—	—	—	1·17	—	0·81	12·3	3·5	55·8
Waste	11·5	—	—	—	—	—	—	—	—	—
Whole bird...	100·0	—	—	—	15·62	0·01	5·67	116·8	33·2	529·8
******Head and neck*—										
Meat	69·7	49·6	0·4	—	14·5	—	4·95			
Extract	30·3	—	—	—	1·0	—	0·03			
	100·0				15·5	—	4·98			

POULTRY AND GAME.

GROUSE.

Analytical Data.

—	Water.	Ash.	Sodium Chloride.	Protein.	Carbo-hydrate by Diff.	Fat.	Total.	Energy Value. Calories per—		
								100 gm.	1 oz.	1 lb.
Muscle—										
Back	69·9	1·3	—	25·3	—	1·4	97·9	116·8	33·1	529·8
Breast	72·1	1·2	0·1	24·0	—	0·9	98·3	106·8	30·3	484·4
Leg	69·9	1·5	0·1	24·4	—	3·0	98·9	127·9	36·3	580·1
Wing	69·9	1·2	0·1	26·2	—	2·9	100·2	134·4	38·1	609·6
Skin	73·6	0·6	0·2	17·7	—	6·4	98·5	132·1	37·4	599·2
Gizzard	74·6	1·1	0·1	21·7	—	0·7	98·2	95·5	27·1	433·2
Heart	70·7	1·1	—	21·4	0·6	6·2	100·0	147·9	41·9	670·9
Kidneys	73·4	0·8	—	16·3	—	3·7	94·2	101·2	28·7	459·0
Liver	73·6	1·4	—	19·5	2·9	2·6	100·0	116·0	32·9	526·2
Lungs	73·2	0·7	—	19·6	—	3·0	96·5	108·3	30·7	491·3
Carcase and bones: extract ...	—	—	—	0·7	—	0·1	to 100	3·8	1·1	17·2

POULTRY AND GAME.

GROUSE.

Analytical Data Calculated according to Proportions of Parts.

—	Per-centage Amount.	Water.	Ash.	Sodium Chloride.	Protein.	Carbo-hydrate.	Fat.	Energy Value. Calories per—		
								100 gm.	1 oz.	1 lb.
Muscle—										
Back	2·3	1·6	0·03	—	0·58	—	0·03			
Breast	27·9	20·1	0·33	0·03	6·69	—	0·25			
Leg	5·8	4·0	0·09	0·01	1·42	—	0·17			
Wing	3·5	2·4	0·04	0·01	0·94	—	0·10			
Skin...	7·3	5·4	0·04	0·01	1·29	—	0·47			
All muscle	46·8	33·5	0·53	0·06	10·92	—	1·02	54·3	15·4	246·3
Gizzard	3·7	2·8	0·04		0·80	—	0·03			
Heart	1·6	1·1	0·02		0·34	0·01	0·10			
Kidney	0·5	0·4	0·00		0·08	—	0·02			
Liver	2·5	1·8	0·04		0·49	0·07	0·06			
Lungs	0·7	0·5	0·01		0·14	—	0·02			
All offal	9·0	6·6	0·11		1·85	0·08	0·23	10·1	2·9	45·8
Bones	17·7	—	—	—	0·12	—	0·02	0·7	0·2	3·2
Intestines	26·5	—	—	—	—	—	—	—	—	—
Whole bird...	100·0	40·1	0·64	0·06	12·89	0·08	1·27	65·1	18·5	295·3

POULTRY AND GAME.

PARTRIDGE.

ANALYTICAL DATA.

—	Water.	Ash.	Sodium Chloride.	Protein.	Carbo-hydrate by Diff.	Fat.	Total.	Energy Value. Calories per—		
								100 gm.	1 oz.	1 lb.
Muscle—										
Back	72·0	1·1	0·2	23·0	—	4·3	100·6	134·3	38·1	609·2
Breast	72·2	1·3	0·1	24·2	—	1·6	99·4	114·1	32·4	517·6
Leg	69·3	1·4	0·1	24·4	—	5·3	100·5	149·3	42·3	677·2
Wing	69·5	1·7	0·2	25·8	—	3·3	100·5	136·5	38·7	619·2
Skin...	50·9	0·9	0·1	17·8	—	30·9	100·6	360·4	102·2	1,634·8
Gizzard	75·0	0·6	0·1	21·9	—	2·8	100·4	115·8	32·8	525·3
Heart	69·5	0·8	—	19·0	2·0	8·7	100·0	167·0	47·3	757·5
Kidneys	—	—	—	—	—	—	—	—	—	—
Liver	70·2	1·5	—	21·9	2·6	3·8	100·0	135·8	38·5	616·0
Lungs	73·9	1·1	—	21·0	—	2·1	98·1	105·6	29·9	479·0
Carcase and bones	—	—	—	0·8	—	0·2	to 100	5·1	1·4	23·1

POULTRY AND GAME.

PARTRIDGE.

ANALYTICAL DATA CALCULATED ACCORDING TO PROPORTIONS OF PARTS.

—	Percentage Amount.	Water.	Ash.	Sodium Chloride.	Protein.	Carbohydrate.	Fat.	Energy Value. Calories per—		
								100 gm.	1 oz.	1 lb.
Muscle—										
Back	3·1	2·2	0·03	0·01	0·71	—	0·13			
Breast	27·2	19·6	0·35	0·03	6·58	—	0·43			
Leg	11·8	8·2	0·16	0·01	2·88	—	0·62			
Wing	2·7	1·9	0·05	0·01	0·69	—	0·09			
Skin...	5·9	3·0	0·05	0·01	1·05	—	1·82			
All muscle	50·7	34·9	0·64	0·07	11·91	—	3·09	77·6	22·0	352·0
Gizzard	3·5	2·6	0·02	0·00	0·77	—	0·10			
Heart	0·7	0·5	0·01	—	0·13	0·01	0·06			
Kidneys	—	—	—	—	—	—	—			
Liver	2·5	1·8	0·04	—	0·55	0·07	0·09			
Lungs	1·1	0·8	0·01	—	0·23	—	0·02			
All offal	7·8	5·7	0·07	0·00	1·68	0·08	0·27	9·7	2·8	44·0
Bones and carcase	22·6	—	—	—	0·18	—	0·04	1·1	0·3	5·0
Intestines and feathers	19·0	—	—	—	—	—	—	—	—	—
Whole bird...	100·1	40·6	0·72	0·07	13·77	0·08	3·40	88·4	25·1	401·0

POULTRY AND GAME.

PHEASANT.

ANALYTICAL DATA.

—	Water.	Ash.	Sodium Chloride.	Protein.	Carbo-hydrate by Diff.	Fat.	Total.	Energy Value. Calories per—		
								100 gm.	1 oz.	1 lb.
Muscle—										
Back	57·8	1·1	0·2	22·9	—	20·8	102·8	287·3	81·5	1,303·2
Breast	69·9	1·3	0·1	25·1	—	3·3	99·7	133·6	37·9	606·0
Leg	66·3	1·4	0·1	20·8	—	10·6	99·2	183·9	52·1	834·2
Wing	68·8	1·2	0·2	24·4	—	4·6	99·2	142·8	40·5	647·7
Skin...	31·1	0·7	—	16·3	—	50·7	98·8	538·3	152·6	2,441·7
Brain	78·2	1·3	—	12·7	—	7·0	99·2	117·2	33·2	531·6
Fat	11·6	0·2	—	2·1	—	87·3	101·2	820·5	232·6	3,721·8
Gizzard	69.8	1·0	0·1	23·5	—	5·2	99·6	144·7	41·0	656·4
Heart	65·2	0·9	—	19·5	1·3	13·1	98·7	207·1	58·7	939·4
Kidneys	74·4	1·2	0·2	19·8	—	4·3	99·9	121·2	34·4	549·8
Liver	73·1	1·2	0·1	19·4	3·5	2·7	100·0	119·0	33·7	539·8
Lungs	67·7	1·2	0·2	28·5	—	1·5	99·1	130·8	37·1	593·3
After boiling—										
Head and neck, meat	67·6	1·0	—	26·8	—	4·8	100·2	154·5	43·8	700·8
,, extract ...	—	—	—	1·8	—	1·3	to 100	19·5	5·5	88·4
Carcase and bones : extract ...	—	—	—	4·0	—	7·2	to 100	83·4	23·6	378·3

POULTRY AND GAME.

PHEASANT.

ANALYTICAL DATA CALCULATED ACCORDING TO PROPORTIONS OF PARTS.

—	Percentage Amount.	Water.	Ash.	Sodium Chloride.	Protein.	Carbohydrate.	Fat.	Energy Value. Calories per—		
								100 gm.	1 oz.	1 lb.
Muscle—										
Back	3·6	2·1	0·04	0·01	0·82	—	0·75			
Breast	27·7	19·4	0·36	0·03	6·95	—	0·91			
Leg	16·2	10·7	0·23	0·02	3·37	—	1·72			
Wing	5·9	4·1	0·07	0·01	1·44	—	0·27			
Skin...	7·3	2·3	0·05	—	1·19	—	3·70			
All muscle	60·7	38·6	0·75	0·07	13·77	—	7·35	124·8	35·4	566·1
Brain	0·4	0·3	0·00	—	0·05	—	0·03			
Fat	1·3	0·2	0·00	—	0·03	—	1·13			
Gizzard	2·0	1·4	0·02	0·00	0·47	—	0·10			
Heart	0·6	0·4	0·00	—	0·12	0·01	0·08			
Kidneys	0·6	0·4	0·01	0·00	0·12	—	0·03			
Liver	1·9	1·4	0·02	0·00	0·37	0·07	0·05			
Lungs	0·7	0·5	0·01	0·00	0·20	—	0·01			
All offal	7·5	4·6	0·06	0·00	1·36	0·08	1·43	19·2	5·4	87·1

POULTRY AND GAME.

PHEASANT.

Analytical Data Calculated according to Proportions of Parts—*continued.*

—	Percentage Amount.	Water.	Ash.	Sodium Chloride.	Protein.	Carbohydrate.	Fat.	Energy Value. Calories per—		
								100 gm.	1 oz.	1 lb.
*Head and neck: meat and extract	5·3	—	—	—	0·67	—	0·15	4·1	1·2	18·6
Carcase and bones extract ...	9·8	—	—	—	0·39	—	0·71	8·2	2·3	37·2
Waste	16·7	—	—	—	—	—	—	—	—	—
Whole bird...	100·0	—	—	—	16·19	0·08	9·64	156·3	44·3	709·0
**Head and neck*—										
Meat	43·2	29·2	0·43	—	11·6	—	2·07			
Extract	56·8	—	—	—	1·0	—	0·74			
	—	—	—	—	12·6	—	2·81			

POULTRY AND GAME.

WILD DUCK.

ANALYTICAL DATA.

—	Water.	Ash.	Sodium Chloride.	Protein.	Carbo-hydrate by Diff.	Fat.	Total.	Energy Value. Calories per—		
								100 gm.	1 oz.	1 lb.
Muscle—										
Back	67·7	1·1	0·0	25·3	—	6·4	100·5	163·3	46·3	740·7
Breast	70·4	1·3	0·1	23·6	—	3·7	99·1	131·2	37·2	595·1
Leg	67·7	1·1	0·2	21·2	—	9·4	99·6	174·3	49·4	790·6
Wing	65·1	1·4	0·2	25·5	—	6·6	98·8	165·9	47·0	752·5
Skin...	21·0	0·5	—	11·4	—	67·7	100·6	676·4	191·8	3,068·2
Brain	79·2	1·4	—	12·3	—	7·5	100·4	120·2	34·1	545·2
Gizzard	74·6	1·0	0·2	22·5	—	1·6	99·9	107·1	30·4	485·8
Heart	71·6	1·2	0·2	19·1	0·9	7·0	100·0	147·1	41·7	667·2
Kidneys	73·5	1·2	0·1	21·2	—	1·6	97·6	101·8	28·9	461·8
Liver	70·7	1·4	0·1	20·6	4·4	2·8	100·0	128·5	31·3	582·9
Lungs	74·1	1·3	0·2	22·6	—	1·4	99·6	105·7	30·0	479·5
After boiling—										
Head and neck, meat	65·0	0·8	—	26·1	—	6·3	98·2	165·6	46·9	751·2
„ extract ...	—	—	—	3·1	—	0·4	to 100	16·4	4·6	74·4
Carcase and bones extract ...	—	—	—	3·6	—	3·0	to 100	42·7	12·1	193·7

POULTRY AND GAME.

WILD DUCK.

Analytical Data Calculated according to Proportions of Parts.

—	Percentage Amount.	Water.	Ash.	Sodium Chloride.	Protein.	Carbo- by Diff.	Fat.	Energy Value. Calories per—		
								100 gm.	1 oz.	1 lb.
Muscle—										
Back	1·0	0·7	0·11	0·00	0·25	—	0·06			
Breast	23·6	16·6	0·31	0·02	5·57	—	0·87			
Leg	5·5	3·7	0·06	0·01	1·17	—	0·52			
Wing	6·4	4·2	0·09	0·01	1·63	—	0·42			
Skin...	10·1	2·1	0·05	—	1·15	—	6·84			
All muscle	46·6	27·3	0·62	0·04	9·77	—	8·71	121·1	34·3	549·3
Brain	0·6	0·5	0·01	—	0·07	—	0·04			
Gizzard	6·3	4·7	0·06	0·01	1·42	—	0·10			
Heart	1·3	0·9	0·02	0·00	0·25	0·01	0·09			
Kidneys	1·3	1·0	0·02	0·00	0·28	—	0·02			
Liver	2·4	1·7	0·03	0·00	0·49	0·11	0·07			
Lungs	1·5	1·1	0·02	0·00	0·34	—	0·02			
All offal	13·4	9·9	0·16	0·01	2·85	0·12	0·34	15·3	4·3	69·4

*Head and neck: meat and extract	6·0	—	—	—	0·57	—	0·12	3·5	1·0	15·9
Carcase and bones extract ...	12·7	—	—	—	0·46	—	0·38	5·4	1·5	24·5
Waste	21·3	—	—	—	—	—	—	—	—	—
Whole bird...	100·0	—	—	—	13·65	0·12	9·55	145·3	41·1	659·1
**Head and neck*—										
Meat	28·0	18·2	0·22	—	7·3	—	1·76			
Extract	72·0	—	—	—	2·2	—	0·29			
	100·0	—	—	—	9·5	—	2·05			

POULTRY AND GAME.

HARE (SCOTCH).

ANALYTICAL DATA.

—	Water.	Ash.	Sodium Chloride.	Protein.	Carbo-hydrate by Diff.	Fat.	Total.	Energy Value. Calories per—		
								100 gm.	1 oz.	1 lb.
Muscle—										
Back	73·7	1·1	0·2	21·7	—	1·9	98·6	106·6	30·2	483·5
Flank	71·7	1·1	0·2	21·2	—	3·6	97·8	120·4	34·1	546·1
Fore leg	72·4	1·1	0·1	23·4	—	2·4	99·4	118·3	33·5	536·6
Hind leg...	74·9	1·1	0·2	21·7	—	1·6	99·5	103·9	29·5	471·3
Brain	77·5	1·4	—	11·7	—	9·2	99·8	133·5	37·9	605·6
Heart	76·3	1·0	0·2	18·9	1·3	2·3	100·0	104·2	29·5	472·7
Kidneys	74·2	1·3	0·2	18·4	—	3·7	97·8	109·9	31·2	498·5
Liver	74·8	0·9	0·1	17·9	3·8	2·5	100·0	112·2	31·8	508·9
Lungs	76·7	1·0	0·2	19·7	—	1·3	98·9	92·9	26·3	421·4
Suet...	28·4	0·4	—	5·4	—	63·0	97·2	608·0	172·4	2,757·9
***After boiling*—**										
Head, neck, carcase, bones—										
Meat	71·0	1·0	—	20·5	—	6·2	98·7	141·7	40·2	642·7
Extract	—	—	—	1·6	—	0·00	to 100	6·6	1·9	29·9

POULTRY AND GAME.

HARE (SCOTCH).

ANALYTICAL DATA CALCULATED ACCORDING TO PROPORTIONS OF PARTS.

—	Percentage Amount.	Water.	Ash.	Sodium Chloride.	Protein.	Carbohydrate.	Fat.	Energy Value. Calories per—		
								100 gm.	1 oz.	1 lb.
Muscle—										
Back	12·1	8·9	0·13	0·02	2·63	—	0·23			
Flank	1·9	1·4	0·02	0·00	0·40	—	0·07			
Fore leg	6·1	4·4	0·07	0·01	1·43	—	0·15			
Hind leg...	18·2	13·6	0·20	0·04	3·95	—	0·29			
All muscle	38·3	28·3	0·42	0·07	8·41	—	0·74	41·4	11·7	187·8
Brain	0·5	0·4	0·01	—	0·06	—	0·05			
Heart	1·2	0·9	0·01	0·00	0·23	0·02	0·03			
Kidneys	0·6	0·4	0·01	0·00	0·11	—	0·02			
Liver	2·6	1·9	0·02	0·00	0·46	0·10	0·06			
Lungs	1·6	1·2	0·02	0·00	0·31	—	0·02			
Suet...	0·2	0·1	0·00	0·00	0·01	—	0·13			
All offal	6·7	4·9	0·07	0·00	1·18	0·12	0·31	8·2	2·3	37·2
*Carcase, head, neck, &c. ...	16·1	—	—	—	1·39	—	0·27	8·2	2·3	37·2
Waste	38·8	—	—	—	—	—	—	—	—	—
Whole hare	99·9	—	—	—	10·98	0·12	1·32	57·8	16·3	262·2
**Carcase, &c.*—										
Meat	36·6	26·0	0·37	—	7·5	—	2·27			
Bones, &c.	63·4	—	—	—	1·0	—	0·00			
	100·0	—	—	—	8·5	—	2·27			

POULTRY AND GAME.

RABBIT (FROZEN).

Analytical Data.

—	Water.	Ash.	Sodium Chloride.	Protein.	Carbo-hydrate by Diff.	Fat.	Total.	Energy Value. Calories per—		
								100 gm.	1 oz.	1 lb.
Muscle—										
Back	75·3	1·1	0·1	22·4	—	1·6	100·5	106·7	30·3	484·0
Flank	68·2	0·9	0·3	21·6	—	9·2	100·2	174·2	49·4	790·2
Fore leg and shoulder... ...	73·2	1·1	0·6	21·7	—	3·8	100·4	124·3	35·2	563·8
Hind leg...	75·2	1·0	0·3	22·7	—	0·5	99·7	97·8	27·7	443·6
Brain	71·7	1·2	—	11·5	—	15·4	99·8	190·4	54·0	863·6
Heart*	70·7	1·1	—	21·5	1·9	4·8	100·0	140·6	39·9	637·8
Kidneys†	73·9	1·3	0·3	19·5	—	3·0	98·0	107·9	30·6	489·4
Liver†	69·3	1·6	0·3	23·3	2·7	2·8	100·0	132·6	37·6	601·5
Lungs†	68·1	1·2	—	16·5	—	11·5	97·2	174·6	49·5	792·0
Suet...	10·4	0·4	—	3·7	—	81·7	96·2	775·0	219·7	3,515·4
Bone extract	—	—	—	4·9	—	5·5	to 100	71·2	20·8	323·0

* Mean of analyses of hearts of three animals.

† Mean of analyses of organs of four animals.

POULTRY AND GAME.

RABBITS (FROZEN).

ANALYTICAL DATA CALCULATED ACCORDING TO PROPORTIONS OF PARTS.

—	Percentage Amount.	Water.	Ash.	Sodium Chloride.	Protein.	Carbohydrate by Diff.	Fat.	Energy Value. Calories per— 100 gm.	1 oz.	1 lb.
Muscle—										
Back	7·3	5·5	0·08	0·01	1·64	—	0·12			
Flank	16·2	11·1	0·15	0·05	3·50	—	1·49			
Fore leg and shoulder... ...	17·2	12·6	0·19	0·10	3·73	—	0·65			
Hind leg...	7·6	5·7	0·08	0·02	1·73	—	0·04			
All muscle	48·3	34·9	0·50	0·18	10·60	—	2·30	64·9	18·4	294·4
Brain	0·5	0·4	0·01	—	0·06	—	0·08			
Heart	0·3	0·2	0·00	—	0·06	0·01	0·01			
Kidneys	0·7	0·5	0·01	0·00	0·14	—	0·02			
Liver	2·1	1·5	0·03	0·01	0·49	0·06	0·06			
Lungs	0·9	0·6	0·01	—	0·15	—	0·10			
Suet...	1·0	0·1	0·00	—	0·04	—	0·82			
All offal	5·5	3·3	0·06	0·01	0·94	0·07	1·09	14·3	4·0	64·9
Bones	20·2	—	—	—	0·99	—	1·11	14·4	4·1	65·3
Refuse	26·0	—	—	—	—	—	—	—	—	—
Whole rabbit	100·0	—	—	—	12·53	0·07	4·5	93·6	26·5	424·6
TINNED RABBIT.										
—	—	74·7	0·5	4·2	19·5	—	0·9	88·3	25·0	400·5

VENISON (SPECIAL SECTIONS).

I.—Proportions of Parts.

	Gm.	Per-centage.
Rib—		
Bones	148	17·3
Fat	210	24·5
Lean	375	43·8
Skin, hard ...	124	14·4
Total ...	857	100·0

	Gm.	Per-centage.
Shoulder—		
Bone	170	17·4
Fat and skin ...	119	12·2
Lean	668	68·2
Marrow	22	2·2
Total	979	100·0

VENISON.

II.—Analytical Data.

—	Water.	Ash.	Sodium Chloride.	Protein.	Carbo-hydrate.	Fat.	Total.	Energy Value. Calories per—		
								100 gm.	1 oz.	1 lb.
Rib—										
Fat	5·2	0·2	—	5·4	—	89·4	100·2	853·6	242·0	3,871·9
Lean	68·7	1·1	0·1	23·6	—	6·1	99·6	153·5	43·5	696·3
Skin, hard	39·0	1·6	0·1	35·8	—	20·7	97·2	339·3	96·2	1,539·1
Shoulder—										
Fat and skin	28·5	0·5	—	9·8	—	61·0	99·8	607·5	172·2	2,755·6
Lean	69·9	1·2	0·1	22·6	—	4·1	97·9	130·8	37·1	593·3
Marrow	5·6	0·5	—	0·9	—	94·3	101·3	880·7	249·7	3,994·9

VENISON.

III.—Analytical Data Calculated according to Proportions of Parts.

—	Percentage Amount.	Water.	Ash.	Sodium Chloride.	Protein.	Carbohydrate.	Fat.	Energy Value. Calories per—		
								100 gm.	1 oz.	1 lb.
Rib—										
Bone	17·3	—	—	—	—	—	—			
Fat	24·5	1·3	0·05	—	1·32	—	21·90			
Lean	43·8	30·1	0·48	0·04	10·34	—	2·67			
Skin, hard	14·4	5·6	0·23	0·01	5·16	—	2·98			
	100·0	37·0	0·76	0·05	16·82	—	27·55	325·2	92·2	1,475·1
Shoulder—										
Bone	17·4	—	—	—	—	—	—			
Fat and skin	12·2	3·5	0·06	—	1·19	—	7·44			
Lean	68·2	47·7	0·82	0·07	15·41	—	2·80			
Marrow	2·2	0·1	0·01	—	0·02	—	2·07			
	100·0	51·3	0·89	0·07	16·62	—	12·31	182·6	51·8	828·3

FISH.

Between fifty and sixty different varieties of fish were obtained on the market during the months of January, February and March, 1919. The custom at the time was to sell the fish without its intestine, only the liver and roes being retained. Only in a few cases has the whole fish, as caught, been purchased. This custom may be to reduce the weight during transit from the coast, as well as to prevent decomposition, as the intestines are generally the first organs to become putrid.

Fish vary considerably according to the time of year they are caught ; *i.e.*, whether it is or is not the breeding season. They also vary according to the state of nutrition. It has not been possible to make allowance for the breeding season nor for the state of nutrition. In most cases only one fish has been purchased for analysis, so that the data are for one specimen, but they are probably in the neighbourhood of the general value.

The fish, as purchased, have been separated into their component parts, and the weights of these have been noted so as to find out the proportion. In general, some 40 to 50 per cent. of fish consists of bone. The component parts have been separately analysed. From these data and the proportions the figures for the whole fish are calculated ; allowance is thus made for the waste. Further, the calculations are made for the fish with and without skin, for sometimes the skin is eaten and sometimes not eaten. Extra calculations can easily be made for the fish without roe, liver, etc. ; these calculations are not included in the following tables.

Fish may be roughly divided into several groups :—

1. Those with a good deal of fat : Herring, mackerel, salmon, sprats.
2. Those with a small amount of fat : Gurnets, mullets, etc.
3. Those with very little fat : Cod, haddock, whiting, hake, etc.
4. Flat fish : Brill, dab, halibut, sole, etc.
5. Fresh-water fish : Eel, perch, trout.
6. Molluscs.
7. Crustaceans.

The various data are grouped together under these headings.

FISH.

PROPORTIONS OF THE VARIOUS PARTS.

Fresh Herrings.

	Gm.	Percentage.
3 *Yearlings*—		
Flesh	174	65·2
2 soft roes ...	11	4·1
1 hard roe ...	7	2·6
Waste—Bone, gut	75	28·1
Total	267	100·0
Female—		
Flesh	118	64·1
Skin	7	3·8
Hard roe ...	16	8·7
Waste	43	23·4
Total	184	100·0

	Gm.	Percentage.
Male—		
Flesh	125	59·8
Skin	10	4·8
Soft roe	32	15·3
Waste	42	20·1
Total	209	100·0

Preserved Herrings.

	Gm.	Percentage.
Salted Male—		
Flesh	60	54·0
Skin	8	7·3
Soft roe ...	21	18·9
Waste	22	19·8
Total	111	100·0
Salted Female—		
Flesh	62	48·8
Skin	8	6·3
Hard roe ...	29	22·8
Waste	28	22·1
Total	127	100·0
Kippers—		
Flesh	140	75·0
Skin	12	6·4
Waste	35	18·6
Total	187	100·0

	Gm.	Percentage.
Bloater, Male—		
Flesh	147	60·0
Skin	6	2·4
Soft roe	45	18·4
Waste	47	19·2
Total	245	100·0
Bloater, Female—		
Flesh	121	60·5
Skin	5	2·5
Hard roe ...	35	17·5
Waste	39	19·5
Total	200	100·0

Mackerel (2 *fish*)—		
Flesh	365	57·7
Skin	17	2·7
Waste	250	39·6
Total	632	100·0

Whitebait (40 *fishes* = 135 gms.)		
20 *fishes*—		
Flesh and skin ...	42	62·7
Waste	25	37·3
Total	67	100·0

FISH.

PROPORTIONS OF THE VARIOUS PARTS—*continued.*

	Gm.	Per-centage.
Sprats (7 fishes)—		
Flesh and skin ...	74	74·0
Waste	26	26·0
Total	100	100·0
Smoked Sprats (6 fishes)—		
Flesh and skin ...	42	79·2
Waste	11	20·8
Total	53	100·0
Smelts (4 fishes)—		
Flesh and skin ...	60·0	59·4
1 hard roe ...	1·5	1·5
3 soft roes ...	2·5	2·5
Waste	37·0	36·6
Total	101·0	100·0
Dog Fish—		
Flesh	607·5	49·2
Skin	80·0	6·5
Hard roe ...	4·5	0·4
Liver	150·0	12·1
Waste	393·0	31·8
Total	1,235·0	100·0
Sturgeon Section—		
Flesh	203·5	88·1
Skin	12·0	5·2
Soft bone ...	15·5	6·7
Total	231·0	100·0
Salmon Section—		
Flesh	164	79·2
Skin	8	3·9
Waste	35	16·9
Total	207	100·0
Red Gurnet—		
Flesh	232	43·6
Skin	16	3·0
Hard roe ...	7	1·3
Liver	16	3·0
Waste	261	49·1
Total	532	100·0

	Gm.	Per-centage.
Grey Gurnet—		
Flesh	210	44·0
Skin	15	3·1
Hard roe ...	43	9·0
Liver	10	2·1
Waste	200	41·8
Total	478	100·0
Red Mullet (2 fishes)—		
Flesh	214	59·4
Skin	20	5·6
Liver	6	1·7
Waste	120	33·3
Total	360	100·0
Grey Mullet—		
Flesh	963	72·3
Skin	90	6·8
Waste	278	20·9
Total	1,331	100.0
Bass—		
Flesh	625	53·0
Skin	55	4·7
Soft roe	72	6·1
Liver	13	1·1
Waste	415	35·1
Total	1,180	100·0
Bream—		
Flesh	256	43·4
Hard roe ...	4	0·7
Waste	330	55·9
Total	590	100·0
Haddock (Fresh)—		
Flesh	231	65·3
Waste	123	34·7
Total	354	100·0

FISH.

PROPORTIONS OF THE VARIOUS PARTS—*continued.*

	Gm.	Percentage.
Codling—		
Flesh	410	54·3
Skin	35	4·7
Waste	310	41·0
Total	755	100·0
Haddock—		
Hard roes (2)	98	100·0
Cod—		
Hard roe	158	100·0
Smoked Haddock—		
Flesh	200	76·3
Waste	62	23·7
Total	262	100·0
Whiting—		
Flesh and skin	165	63·6
Waste	95	36·4
Total	260	100·0
Cod Section—		
Flesh	265	83·3
Skin	14	4·4
Waste	39	12·3
Total	318	100·0
Saithe or Coal Fish Section—		
Flesh	189	88·3
Skin	9	4·2
Waste	16	7·5
Total	214	100·0
Hake—		
Flesh	1,223·5	65·4
Skin	34·0	1·8
Liver	2·5	0·1
Waste	612·0	32·7
Total	1,872·0	100·0

	Gm.	Percentage.
Ling—		
Flesh	5,159	59·6
Skin	499	5·8
Hard roe	680	7·9
Waste	2,312	26·7
Total	8,650	100·0
Pout Whiting—		
Flesh	215·0	50·5
Skin	18·6	4·4
Soft roe	3·4	0·8
Waste	189·0	44·3
Total	426·0	100·0
Conger Eel—		
Flesh	930	65·3
Skin	103	7·2
Waste	392	27·5
Total	1,425	100·0
Brill—		
Flesh	748	58·4
Black skin	36	2·8
White skin	36	2·8
Soft roe	3	0·2
Waste	458	35·8
Total	1,281	100·0
Dab—		
Flesh	349	60·2
Black skin	23	4·0
White skin	19	3·3
Hard roe	18	3·1
Waste	171	29·4
Total	580	100·0
Flounder (2 fishes)—		
Flesh	79	46·5
Black skin	9	5·3
White skin	7	4·1
Waste	75	44·1
Total	170	100·0

FISH.

PROPORTIONS OF THE VARIOUS PARTS—*continued.*

Halibut—	Gm.	Percentage.
Flesh	2,093	70·2
Black skin	78	1·9
White skin	85	2·0
Waste	1,070	25·9
Total	4,136	100·0

John Dory—	Gm.	Percentage.
Flesh	863	42·1
Skin	72	3·5
Hard roe	65	3·2
Waste	1,050	51·2
Total	2,050	100·0

Lemon Sole—	Gm.	Percentage.
Flesh	319·0	55·6
Black skin	31·5	5·5
White skin	27·0	4·7
Hard roe	36·2	6·3
Waste	160·3	27·9
Total	574·0	100·0

Plaice—	Gm.	Percentage.
Flesh	347	34·1
Skin	78	19·1
Hard roe	195	7·6
Waste	400	39·2
Total	1,020	100·0

Sole—	Gm.	Per centage.
Flesh	280	61·7
Black skin	14	3·1
White skin	13	2·9
Hard roe	26	5·7
Waste	121	26·6
Total	454	100·0

Skate Section—	Gm.	Per centage.
Flesh	430	65·1
Skin	190	28·8
Waste	40	6·1
Total	660	100·0

Turbot—	Gm.	Per centage.
Flesh	1,215	52·3
Black skin	90	3·9
White skin	80	3·4
Soft roe	10	0·4
Waste	930	40·0
Total	2,325	100·0

Witches—	Gm.	Per centage.
Flesh	73·8	62·5
Black skin	4·5	3·8
White skin	4·7	4·0
Liver	3·0	2·6
Waste	32·0	27·1
Total	118·0	100·0

FRESH WATER FISH.

Eel—	Gm.	Percentage.
Flesh	157	58·8
Skin	48	18·0
Hard roe	5	1·8
Waste	57	21·4
Total	267	100·0

Perch (2 *fishes*)—	Gm.	Percentage.
Flesh	162·5	40·6
Skin	42·0	10·5
Hard roe	64·0	16·0
Liver	6·5	1·6
Waste	125·0	31·3
Total	400·0	100·0

Brook Trout—	Gm.	Per centage.
Flesh	149	68·0
Skin	16	7·3
Waste	54	24·7
Total	219	100·0

FISH.

Proportions of the Various Parts—*continued.*

Molluscs.

	Gm.	Per-centage.
Oysters (12)—		
Flesh	62	10·6
Liquid	65	11·1
Shell, &c. ...	457	78·3
Total	584	100·0
Mussels (12)—		
Flesh	44	24·4
Liquid	40	22·3
Shell, &c. ...	96	53·3
Total	180	100·0
Scallops (2)—		
Flesh	49·5	13·4
Liver, &c. ...	16·5	4·5
Mantle	28·0	7·5
Shell, &c. ...	276·0	74·6
Total	370·0	100·0

	Gm.	Per-centage.
Whelks (6)—		
Flesh	79·5	42·1
Shell, &c. ...	109·5	57·9
Total	189·0	100·0
Cockles, Salted, without Shell—		
26	50	100·0
34	50	100·0
32 (after washing)	50	—
Winkles (24)—		
Flesh	30·8	22·3
Shell, &c. ...	107·2	77·7
Total	138·0	100·0

Crustaceans.

	Gm.	Per-centage.
Crab—		
Flesh	175	26·2
Liver, &c. ...	96	14·4
Interior waste ...	25	3·7
Shell	372	55·7
Total	668	100·0
Lobster—		
Flesh	160	53·9
Liver, &c. ...	15	5·1
Interior waste ...	7	2·3
Shell	115	38·7
Total	297	100·0

	Gm.	Per-centage.
Shrimps (41)—		
Flesh	25	47·2
Shell	28	52·8
Total	53	100·0
Prawns (18)—		
Flesh	23	46·0
Shell	27	54·0
Total	50	100·0

FISH.

Analyses of the Various Parts.

(A) *Flesh.*

—	Water.	Ash.	Protein.	Carbo-hydrate.	Fat.	Total.	Energy Value. Calories per— 100 gm.	1 oz.	1 lb.
Fatty Fish—									
Herring—									
Fresh, Yearling	65·4	1·4	16·2	—	15·6	98·6	210·9	59·8	956·6
,, Male	67·5	2·6	18·6	—	10·9	99·6	177·6	50·3	805·6
,, Female	63·2	2·0	18·1	—	15·7	99·0	220·2	62·4	998·8
Salted, Male	38·4	9·4	28·9	—	25·9	102·6	359·4	101·9	1,630·2
,, Female	41·8	7·3	30·7	—	19·0	98·8	302·6	85·8	1,372·6
Bloater, Male	65·4	1·2	17·8	—	14·9	99·3	211·6	60·0	959·8
,, Female	67·2	1·9	16·9	—	13·3	99·3	193·0	54·7	875·4
Kipper	62·5	4·5	18·8	—	14·9	100·7	215·7	61·2	978·4
Mackerel	69·3	1·2	19·1	—	10·7	100·3	177·8	50·4	806·5
Whitebait (whole)	82·2	1·7	13·1	—	3·1	100·1	82·5	23·4	374·2
*Whitebait	81·4	1·0	14·7	—	3·1	100·2	89·1	25·3	404·2
*Sprats, Fresh	66·8	1·8	17·1	—	14·5	100·2	205·0	58·1	929·9
* ,, Smoked	49·7	4·0	26·8	—	18·8	99·3	284·7	80·7	1,291·4
*Smelts	78·0	1·6	17·6	—	2·1	99·3	91·7	26·0	416·0
Dogfish	75·1	1·2	19·6	—	5·6	101·5	132·4	37·5	600·6
Sturgeon	77·2	1·1	17·8	—	4·9	101·0	118·6	33·6	538·0
Salmon	64·4	1·3	18·6	—	15·8	100·1	223·2	63·3	1,012·4
Fish with Less Fat—									
Red Gurnet	77·2	1·4	19·7	—	1·1	99·4	91·0	25·8	412·8
Grey Gurnet	76·0	1·2	20·2	—	2·3	99·7	104·2	29·5	472·6
Red Mullet	74·9	1·3	19·0	—	5·1	100·3	125·3	35·5	568·4
Grey Mullet	75·6	1·2	19·5	—	3·9	100·2	116·2	32·9	527·1
Bass...	77·0	1·2	19·3	—	2·5	100·0	104·4	29·6	473·6
Bream	78·8	1·1	17·6	—	1·5	99·0	86·1	24·4	390·5

* With Skin.

FISH.

ANALYSES OF THE VARIOUS PARTS—*continued.*

(A) *Flesh*—continued.

—	Water.	Ash.	Protein.	Carbo-hydrate	Fat.	Total.	Energy Value. Calories per—		
							100 gm.	1 oz.	1 lb.
Non-Fatty Fish—									
*Whiting	80·4	1·1	17·7	—	0·2	99·4	74·4	21·1	337·5
Haddock, Fresh	79·1	1·4	18·4	—	0·3	99·2	78·2	22·2	354·7
,, Smoked...	75·3	4·5	19·6	—	0·3	99·7	83·2	23·6	377·4
Codling	80·3	1·2	18·0	—	0·2	99·7	75·7	21·5	343·4
Cod	80·6	1·2	17·5	—	0·1	99·4	72·7	20·6	329·8
Saithe	81·2	1·1	16·4	—	0·3	99·0	70·0	19·8	317·5
Hake	79·5	1·3	18·0	—	1·0	99·8	83·1	23·6	376·9
Ling...	78·3	1·1	19·9	—	0·1	99·4	82·5	23·4	374·2
Pout Whiting	79·7	1·2	18·0	—	0·5	99·4	78·5	22·2	356·1
Conger Eel	79·6	1·2	19·1	—	0·2	100·1	80·2	22·7	363·8
Flat Fish—									
Brill...	76·0	1·3	19·8	—	2·5	99·6	104·4	29·6	473·6
Dab	79·1	1·3	18·2	—	1·2	99·8	85·8	24·3	389·2
Flounder	81·3	1·3	16·8	—	0·3	99·7	71·7	20·3	325·2
Halibut	79·0	1·4	18·8	—	0·5	99·7	81·7	23·1	370·6
John Dory	78·0	1·2	18·4	—	1·3	98·9	87·5	24·8	396·9
Lemon Sole	78·9	1·4	18·4	—	0·6	99·3	81·0	23·0	367·4
Plaice	80·8	1·0	15·7	—	2·0	99·5	83·0	23·5	376·5
Skate	76·8	1·0	24·2	—	0·1	102·2	100·2	28·4	454·5
Sole	77·9	1·1	18·8	—	1·8	99·6	93·8	26·6	425·5
Turbot	78·3	1·0	16·8	—	2·5	98·6	92·1	26·1	417·8
Witches	81·0	0·7	17·5	—	0·4	99·6	75·5	21·4	342·5
Fresh Water Fish—									
Eel	60·0	0·9	14·4	—	24·8	100·1	289·7	82·1	1,314·1
Perch	80·4	1·1	17·6	—	0·8	99·9	79·6	22·6	361·1
Brook Trout	78·8	1·2	18·8	—	1·2	100·0	88·2	25·0	400·1

Herring—									
Fresh, Male	47·7	3·5	23·1	—	30·1	104·4	374·6	106·2	1,699·2
,, Female	28·7	7·1	35·2	—	33·8	104·8	458·7	130·0	2,080·7
Salted, Male	16·6	6·3	26·2	—	53·9	103·0	608·7	172·6	2,761·1
,, Female	11·9	9·1	34·5	—	48·4	103·9	591·6	167·7	2,683·5
Bloater, Male	19·8	6·0	42·7	—	33·6	102·1	487·6	138·2	2,211·8
,, Female	22·7	7·2	40·6	—	30·4	100·9	449·2	127·4	2,037·6
Kipper	23·0	4·1	23·6	—	51·9	102·6	579·4	164·3	2,628·2
Mackerel	44·3	1·4	28·0	—	29·3	103·0	387·3	109·8	1,756·8
Dogfish	64·8	6·9	27·3	—	3·6	102·6	145·4	41·2	659·5
Sturgeon	61·6	5·2	32·9	—	3·4	103·1	166·5	47·2	755·2
Salmon	47·7	5·1	40·9	—	10·3	104·0	263·5	74·7	1,195·2
Red Gurnet	61·2	3·3	35·7	—	1·4	101·6	159·4	45·2	723·0
Grey Gurnet	51·8	2·1	44·5	—	2·8	101·2	208·5	59·1	945·8
Red Mullet	60·7	1·6	21·9	—	18·4	102·6	260·9	74·5	1,183·4
Grey Mullet	60·0	0·8	34·3	—	9·5	104·6	229·0	64·9	1,038·7
Bass	63·8	2·1	30·7	—	6·7	103·3	188·2	53·5	853·7
Codling	66·6	3·7	31·0	—	0·2	101·5	129·0	36·6	585·1
Cod Section	72·5	2·1	25·9	—	0·1	100·6	107·1	30·4	485·8
Saithe	64·9	4·0	30·1	—	0·4	99·4	127·1	36·0	576·5
Hake	62·9	2·0	35·5	—	1.2	101·6	156·7	44·4	710·8

* With skin.

FISH.

Analyses of the Various Parts—*continued.*

(B) *Skin*—continued.

—	Water.	Ash.	Protein.	Carbo-hydrate.	Fat.	Total.	Energy Value. Calories per—		
							100 gm.	1 oz.	1 lb.
Ling	66·6	3·1	31·9	—	0·2	101·8	132·6	37·6	601·5
Pout Whiting	67·2	6·9	25·9	—	0·3	100·3	109·0	30·9	494·4
Conger Eel	63·3	1·0	38·4	—	0·2	102·9	159·3	45·1	722·6
Brill, White	55·8	4·2	33·7	—	7·7	101·4	209·8	59·5	951·6
,, Black	55·3	4·3	36·3	—	5·5	101·4	200·0	56·7	907·2
Dab, White	58·4	5·3	31·1	—	6·6	101·4	188·9	53·6	856·8
,, Black	65·2	3·9	26·4	—	5·5	101·0	159·4	45·2	723·0
Flounder, White	71·8	1·6	26·8	—	1·6	101·8	124·9	35·4	566·1
,, Black	74·4	1·9	24·8	—	1·0	102·1	111·0	31·5	503·5
Halibut, White	64·4	2·0	32·9	—	2·7	102·0	160·0	45·5	725·8
,, Black	65·4	2·4	30·3	—	1·6	99·7	139·1	39·4	631·0
John Dory	68·2	1·3	28·0	—	3·5	101·0	174·4	41·8	668·6
Lemon Sole, White	64·3	3·1	28·0	—	3·7	99·1	149·2	42·3	676·8
,, Black	64·6	3·3	27·3	—	3·7	98·9	146·3	41·5	663·6
Plaice, White and Black	58·7	1·5	27·4	—	12·1	99·7	224·9	63·8	1,020·1
Sole, White	51·1	6·8	35·7	—	6·8	100·4	209·6	59·4	950·8
,, Black	47·0	11·5	38·9	—	1·2	98·6	170·7	48·4	774·3
Skate	75·9	3·4	21·8	—	0·1	101·2	90·3	25·6	409·6
Turbot, White	62·8	0·8	32·8	—	3·4	99·8	166·1	47·1	753·4
,, Black	64·5	2·2	30·4	—	2·0	99·1	126·5	35·9	573·8
Witches, White and Black	69·3	2·8	27·5	—	1·4	101·0	125·8	32·7	570·6
Perch	52·5	19·8	26·1	—	0·6	99·0	112·6	31·9	510·8
Trout	60·8	3·0	34·8	—	2·9	101·5	169·7	48·1	769·8

Herring—									
Fresh Yearling	62·0	2·3	28·1	—	2·1	94·5	134·7	38·2	611·0
Fresh	59·4	2·3	28·1	—	3·1	92·9	144·0	40·8	653·2
Salted	45·1	10·3	35·5	—	2·1	93·0	165·1	46·8	748·9
Bloater	64·9	1·6	27·1	—	1·5	95·1	125·1	35·5	567·4
Smelts	61·9	1·2	19·7	—	15·5	98·3	224·9	63·8	1,020·1
Dogfish	78·3	1·4	19·8	—	2·1	101·6	100·7	28·5	456·8
Red Gurnet	81·4	1·7	14·7	—	1·6	99·4	75·2	21·3	341·1
Grey Gurnet	66·0	2·3	24·9	—	2·1	95·3	121·6	34·5	551·6
Haddock	72·5	1·4	21·4	—	1·0	96·3	97·0	27·5	440·0
Cod	78·7	1·8	17·0	—	0·9	98·4	78·1	22·1	354·3
Ling	68·3	2·2	21·5	—	3·5	95·5	120·7	34·2	547·5
Dab	72·7	2·6	21·7	—	1·2	98·2	100·1	28·4	454·0
John Dory	78·5	1·4	16·0	—	2·1	98·0	85·1	24·1	386·0
Lemon Sole	75·5	1·5	21·0	—	0·7	98·7	92·6	26·2	420·0
Plaice	63·5	1·5	30·6	—	0·3	95·9	128·3	36·4	582·0
Sole	66·5	1·7	24·8	—	3·2	96·2	131·4	37·2	596·0
Eel	59·6	1·2	12·3	—	29·5	102·6	324·8	92·1	1,473·3
Perch	76·7	1·1	15·2	—	3·8	96·8	97·7	27·7	443·3
			Soft Bone.						
Sturgeon	80·2	1·6	12·9	—	5·2	99·9	101·3	28·7	459·5

FISH.

ANALYSES OF THE VARIOUS PARTS—*continued.*

(D) *Soft Roes.*

—	Water.	Ash.	Protein.	Carbohydrate by Diff.	Fat.	Total.	Energy Value. Calories per—		
							100 gm.	1 oz.	1 lb.
Herring—									
Fresh Yearling	65·0	2·0	20·4	—	17·1	104·5	242·7	68·8	1,100·9
Fresh	68·6	3·9	26·0	—	3·6	102·1	140·1	39·7	635·5
Salted	53·9	13·9	29·7	—	7·2	104·7	188·1	53·3	853·2
Bloater	69·7	4·3	27·3	—	4·1	105·4	150·1	42·5	680·8
Smelts	67·0	2·6	24·0	—	9·0	102·6	182·1	51·6	826·0
Bass	84·8	1·8	13·0	—	1·5	101·1	67·3	19·1	305·3
Brill (? Immature)	84·0	1·5	12·0	—	1·4	98·9	62·2	17·6	282·1
Turbot (? ,,)	85·1	1·1	11·3	—	0·8	98·3	53·8	15·2	244·0

(E) *Livers.*

				(Glycogen).					
Dogfish	9·2	0·2	3·5	13·1	74·0	100·0	756·3	214·4	3,430·6
Red Gurnet	64·9	1·2	10·6	7·9	15·4	100·0	219·1	62·1	993·8
Grey Gurnet	73·7	1·8	16·0	2·0	6·5	100·0	134·3	38·1	609·2
Red Mullet	72·3	1·5	14·7	2·5	9·0	100·0	154·2	43·7	699·4
Bass	74·4	1·5	14·6	3·4	6·1	100·0	130·5	37·0	591·9
Pout Whiting	45·6	0·7	7·8	3·2	42·7	100·0	442·2	125·3	2,005·8
Hake	48·1	1·3	10·8	—	44·8	105·0	460·9	130·7	2,090·6
Pesch	78·5	1·8	15·4	2·1	2·2	100·0	92·2	26·1	418·2

(F) *Molluscs.*

Oyster, Flesh...	77·3	4·1	8·9	8·7	1·0	100·0	81·5	23·1	369·7
,, Liquid	96·1	2·6	0·5	0·9	0·0	100·0	5·3	1·5	24·0
Mussels, Flesh	84·4	1·9	10·3	2·6	0·8	100·0	60·3	17·1	273·5
,, Liquid	95·5	2·1	1·6	0·7	0·1	100·0	10·4	2·9	47·2
Scallop, Flesh...	78·9	1·8	18·2	0·9	0·2	100·0	80·2	22·7	363·8
,, Liver, &c.	76·8	2·5	15·3	3·9	1·5	100·0	92·7	26·3	420·5
,, Mantle (Waste)	85·6	2·7	11·7	0·0	0·3	100·3	50·8	14·4	230·4
Whelks	77·2	2·7	17·5	2·1	0·5	100·0	85·0	24·1	385·6
Winkles	72·4	2·7	18·0	4·8	2·1	100·0	113·0	32·0	512·6
Cockles, Unwashed	55·2	23·6	13·0	7·9	0·3	100·0	88·5	25·1	401·4
,, ,,	53·9	26·3	13·3	6·1	0·4	100·0	83·3	23·6	377·8
,, Washed	61·8	18·0	13·9	5·8	0·5	100·0	85·4	24·2	387·4

(G) *Crustaceans.*

Crab, Flesh	73·6	2·7	22·4	1·1	0·2	100·0	98·2	27·8	445·4
Lobster, Flesh	75·0	3·1	19·7	1·9	0·3	100·0	91·4	25·9	414·6
Shrimp	67·6	6·9	23·2	1·4	0·9	100·0	109·2	31·0	495·3
Prawns	71·2	5·2	22·8	0·0	1·3	100·5	105·6	29·9	479·0
Crab, Liver, &c.	69·5	5·2	13·1	4·7	7·5	100·0	142·7	40·5	647·3
Lobster	63·8	3·3	14·5	3·4	14·5	100·0	208·2	59·0	944·4

FISH.

Analyses Calculated according to Proportions of Parts.

—	Percentage Amount.	Water.	Ash.	Protein.	Carbohydrate.	Fat.	Energy Value. Calories per— 100 gm.	1 oz.	1 lb.
Herring, Fresh—									
Yearling, Flesh and Skin...	65·2	42·6	0·9	10·6	—	10·2			
,, Soft Roe	4·1	2·7	0·08	0·8	—	0·7			
,, Hard Roe	2·6	1·6	0·06	0·7	—	0·05			
,, Water	28·1	—	—	—	—	—			
Total (including Skin)	100·0	46·9	1·04	12·1	—	10·95	151·4	42·9	686·8
Male, Flesh, ...	59·8	40·4	1·6	11·1	—	6·5			
,, Soft Roe	15·3	10·5	0·6	4·0	—	0·6			
,, Skin	4·8	2·3	0·2	1·1	—	1·4			
,, Waste	20·1	—	—	—	—	—			
Total (including Skin)	100·0	53·2	2·4	16·2	—	8·5	145·5	41·2	660·0
Total (excluding Skin)	—	50·9	2·2	15·1	—	7·1	127·9	36·3	580·2
Female, Flesh	64·1	40·5	1·3	11·6	—	10·1			
,, Hard Roe	8·7	5·2	0·2	2·4	—	0·3			
,, Skin	3·8	1·1	0·3	1·3	—	1·3			
,, Waste	23·4	—	—	—	—	—			
Total (including Skin)	100·0	46·8	1·8	15·3	—	11·7	171·5	48·6	777·9
Total (excluding Skin)	—	45·7	1·5	14·0	—	10·4	154·1	43·7	699·0

Herring, Salted—									
Male, Flesh	54·0	20·7	5·1	15·6	—	14·0			
,, Soft Roe	18·9	10·2	2·6	5·6	—	1·4			
,, Skin	7·3	1·2	0·5	1·9	—	3·9			
,, Waste	19·8	—	—	—	—	—			
Total (including Skin)	100·0	32·1	8·2	23·1	—	19·3	274·2	77·7	1,243·8
Total (excluding Skin)	—	30·9	7·7	21·2	—	15·4	230·1	65·2	1,043·7
Female, Flesh	48·8	20·4	3·6	15·0	—	9·3			
,, Hard Roe	22·8	10·3	2·3	8·1	—	0·5			
,, Skin	6·3	0·8	0·6	2·2	—	3·1			
,, Waste	22·1	—	—	—	—	—			
Total (including Skin)	100·0	31·5	6·5	25·3	—	12·9	223·7	63·4	1,014·7
Total (excluding Skin)	—	30·7	5·9	23·1	—	9·8	185·9	52·7	843·2
Herring, Bloater—									
Male, Flesh	60·0	39·2	0·7	10·7	—	8·9			
,, Soft Roe	18·4	12·8	0·8	5·0	—	0·7			
,, Skin	2·4	0·5	0·1	1·0	—	0·8			
,, Waste	19·2	—	—	—	—	—			
Total (including Skin)	100·0	52·5	1·6	16·7	—	10·4	165·2	46·8	749·3
Total (excluding Skin)	—	52·0	1·5	15·7	—	9·6	153·7	43·6	697·2

FISH.

ANALYSES CALCULATED ACCORDING TO PROPORTIONS OF PARTS—*continued.*

—	Per-centage Amount.	Water.	Ash.	Protein.	Carbo-hydrate.	Fat.	Energy Value. Calories per—		
							100 gm.	1 oz.	1 lb.
Herring, Bloater—									
Female, Flesh	60·5	40·6	1·1	10·2	—	8·0			
,, Hard Roe	17·5	11·4	0·3	4·7	—	0·3			
,, Skin	2·5	0·6	0·2	1·0	—	0·8			
,, Waste	19·5	—	—	—	—	—			
Total (including Skin)	100·0	52·6	1·6	15·9	—	9·1	149·8	42·5	679·2
Total (excluding Skin)	—	52·0	1·4	14·9	—	8·3	138·3	39·2	627·3
Herring, Kipper—									
Flesh	75·0	46·9	3·4	14·1	—	11·1			
Skin	6·4	1·5	0·3	1·5	—	3·5			
Waste	18·6	—	—	—	—	—			
Total (including Skin)	100·0	48·4	3·7	15·6	—	14·4	197·9	56·1	897·7
Total (excluding Skin)	—	46·9	3·4	14·1	—	11·1	161·0	45·6	730·3

Mackerel—									
Flesh	57·7	40·0	0·7	11·0	—	6·2			
Skin	2·7	1·2	0·0	0·8	—	0·8			
Waste	39·6	—	—	—	—	—			
Total (including Skin)	100·0	41·2	0·7	11·8	—	7·0	113·5	32·2	514·8
Total (excluding Skin)	—	40·0	0·7	11·0	—	6·2	102·8	29·1	466·3
Whitebait—									
Flesh and Skin	62·7	51·0	0·6	9·2	—	1·9			
Waste	37·3	—	—	—	—	—			
Total (including Skin)	100·0	51·0	0·6	9·2	—	1·9	55·4	15·7	251·3
Whole Fish	100·0	82·2	1·7	13·1	—	3·1	82·5	23·4	374·2
Sprats, Fresh—									
Flesh and Skin	74·0	49·4	1·3	12·6	—	10·7			
Waste	26·0	—	—	—	—	—			
Total (including Skin)	100·0	49·4	1·3	12·6	—	10·7	151·2	42·9	685·8
Sprats, Smoked—									
Flesh and Skin	79·2	39·4	3·2	21·2	—	14·9			
Waste	20·8	—	—	—	—	—			
Total (including Skin)	100·0	39·4	3·2	21·2	—	14·9	225·5	63·9	1,022·9

FISH.

ANALYSES CALCULATED ACCORDING TO PROPORTIONS OF PARTS—*continued.*

—	Per-centage Amount.	Water.	Ash.	Protein.	Carbo-hydrate.	Fat.	Energy Value. Calories per—		
							100 gm.	1 oz.	1 lb.
Smelts—									
Flesh and Skin	59·4	46·3	1·0	10·4	—	1·2			
Hard Roe	1·5	0·9	0·0	0·3	—	0·2			
Soft Roe	2·5	1·7	0·1	0·6	—	0·2			
Waste	36·6	—	—	—	—	—			
Total (including Skin)	100·0	48·9	1·1	11·3	—	1·6	61·2	17·4	277·6
Dogfish—									
Flesh	49·2	36·9	0·6	9·6	—	2·8			
Skin	6·5	4·2	0·4	1·8	—	0·2			
Hard Roe	0·4	0·3	0·0	0·1	—	0·0			
Liver	12·1	1·1	0·0	0·4	—	8·9			
Waste	31·8	—	—	—	—	—			
Total (including Skin)	100·0	42·5	1·0	11·9	—	11·9	159·5	45·2	723·5
Total (excluding Skin)	—	38·3	0·6	10·1	—	11·7	150·2	42·6	681·3
Total (excluding Skin and Liver) ...	—	37·2	0·6	9·7	—	2·8	65·8	18·7	298·5

Sturgeon Section—									
Flesh	88·1	68·0	1·0	15·7	—	4·3			
Soft Bone	6·7	5·4	0·1	0·9	—	0·3			
Skin	5·2	3·2	0·3	1·7	—	0·2			
Total (including Soft Bone and Skin)	100·0	76·6	1·4	18·3	—	4·8	119·7	33·9	543·0
Total (excluding Skin)	—	73·4	1·1	16·6	—	4·6	110·8	31·4	502·6
Total (excluding Soft Bone) ...	—	71·2	1·3	17·4	—	4·5	113·2	32·1	513·5
Salmon Section—									
Flesh	79·2	51·0	1·0	14·7	—	12·5			
Skin	3·9	1·9	0·2	1·6	—	0·4			
Waste	16·9	—	—	—	—	—			
Total (including Skin)	100·0	52·9	1·2	16·3	—	12·9	186·8	53·0	847·3
Total (excluding Skin)	—	51·0	1·0	14·7	—	12·5	176·5	50·0	800·6
Red Gurnet—									
Flesh	43·6	33·7	0·6	8·6	—	0·5			
Skin	3·0	1·8	0·1	1·1	—	0·0			
Hard Roe	1·3	1·1	0·0	0·2	—	0·0			
Liver	3·0	2·0	0·0	0·3	0·2	0·5			
Waste	49·1	—	—	—	—	—			
Total (including Skin)	100·0	38·6	0·7	10·2	0·2	1·0	51·9	14·7	235·4
Total (excluding Skin)	—	36·8	0·6	9·1	0·2	0·5	42·8	12·1	194·1

FISH.

ANALYSES CALCULATED ACCORDING TO PROPORTIONS OF PARTS—*continued.*

—	Percentage Amount.	Water.	Ash.	Protein.	Carbohydrate.	Fat.	Energy Value. Calories per—		
							100 gm.	1 oz.	1 lb.
Grey Gurnet—									
Flesh	44·0	33·4	0·5	8·9	—	1·0			
Skin	3·1	1·6	0·1	1·4	—	0·1			
Hard Roe	9·0	5·9	0·2	2·2	—	0·2			
Liver	2·1	1·5	0·0	0·3	—	0·1			
Waste	41·8	—	—	—	—	—			
Total (including Skin)	100·0	42·4	0·8	12·8	—	1·4	65·5	18·6	297·1
Total (excluding Skin)	—	40·8	0·7	11·4	—	1·3	58·8	16·7	266·7
Red Mullet—									
Flesh	59·4	44·5	0·8	11·3	—	3·0			
Skin	5·6	3·4	0·1	1·2	—	1·0			
Liver	1·7	1·2	0·0	0·3	—	0·1			
Waste	33·3	—	—	—	—	—			
Total (including Skin)	100·0	49·1	0·9	12·8	—	4·1	90·6	25·7	411·0
Total (excluding Skin)	—	45·7	0·8	11·6	—	3·1	76·4	21·7	346·5

Grey Mullet—									
Flesh	72·3	54·7	0·9	14·1	—	2·8			
Skin	6·8	4·1	0·1	2·3	—	0·6			
Waste	20·9	—	—	—	—	—			
Total (including Skin)	100·0	58·8	1·0	16·4	—	3·4	98·9	28·0	448·6
Total (excluding Skin)	—	54·7	0·9	14·1	—	2·8	83·8	23·8	380·1
Bass—									
Flesh	53·0	40·8	0·6	10·2	—	1·3			
Skin	4·7	3·0	0·1	1·4	—	0·3			
Soft Roe	6·1	5·2	0·1	0·8	—	0·1			
Liver	1·1	0·8	0·0	0·2	0·1	0·1			
Waste	35·1	—	—	—	—	—			
Total (including Skin)	100·0	49·8	0·8	12·6	0·1	1·8	68·8	19·5	312·1
Total (excluding Skin)	—	46·8	0·7	11·2	0·1	1·5	59·9	17·0	271·7
Bream—									
Flesh	43·4	34·2	0·5	7·6	—	0·6			
Roe	0·7	—	—	—	—	—			
Waste	55·9	—	—	—	—	—			
Total (including Skin)	100·0	34·2	0·5	7·6	—	0·6	36·7	10·4	166·5
Whiting—									
Flesh and Skin	63·6	51·1	0·7	11·3	—	0·1			
Waste	36·4	—	—	—	—	—			
Total (including Skin)	100·0	51·1	0·7	11·3	—	0·1	47·3	13·3	214·6

FISH.

ANALYSES CALCULATED ACCORDING TO PROPORTIONS OF PARTS—*continued.*

—	Per-centage Amount.	Water.	Ash.	Protein.	Carbo-hydrate.	Fat.	Energy Value. Calories per— 100 gm.	1 oz.	1 lb.
Haddock, Fresh—									
Flesh	65·3	51·6	0·9	12·0	—	0·2			
Waste	34·7	—	—	—	—	—			
Total (excluding Skin)	100·0	51·6	0·9	12·0	—	0·2	51·1	14·5	231·8
Smoked Haddock—									
Flesh	76·3	57·4	3·4	14·9	—	0·2			
Waste	23·7	—	—	—	—	—			
Total (excluding Skin)	100·0	57·4	3·4	14·9	—	0·2	63·0	17·9	285·8
Codling—									
Flesh	54·3	43·6	0·6	9·8	—	0·1			
Skin	4·7	3·1	0·2	1·5	—	0·0			
Waste	41·0	—	—	—	—	—			
Total (including Skin)	100·0	46·7	0·8	11·3	—	0·1	47·3	13·4	214·6
Total (excluding Skin)	—	43·6	0·6	9·8	—	0·1	41·1	11·7	186·4

Cod Section—									
Flesh	83·3	67·1	1·0	14·6	—	0·1			
Skin...	4·4	3·2	0·1	1·1	—	0·0			
Waste	12·3	—	—	—	—	—			
Total (including Skin)	100·0	70·3	1·1	15·7	—	0·1	65·3	18·5	296·2
Total (excluding Skin)	—	67·1	1·0	14·6	—	0·1	60·8	17·2	275·8
Saithe Section—									
Flesh	88·3	71·7	1·0	14·5	—	0·3			
Skin...	4·2	2·7	0·2	1·3	—	0·0			
Waste	7·5	—	—	—	—	—			
Total (including Skin)	100·0	74·4	1·2	15·8	—	0·3	67·6	19·2	306·6
Total (excluding Skin)	—	71·7	1·0	14·5	—	0·3	62·2	17·6	282·1
Hake—									
Flesh	65·4	52·0	0·8	11·8	—	0·6			
Skin	1·8	1·1	0·0	0·6	—	0·0			
Liver	0·1	0·1	0·0	0·0	—	0·0			
Waste	32·7	—	—	—	—	—			
Total (including Skin)	100·0	53·2	0·8	12·4	—	0·6	56·4	16·0	255·8
Total (excluding Skin)	—	52·0	0·8	11·8	—	0·6	54·0	15·3	244·9

FISH.

Analyses Calculated according to Proportions of Parts—*continued.*

—	Percentage Amount.	Water.	Ash.	Protein.	Carbohydrate.	Fat.	Energy Value. Calories per— 100 gm.	1 oz.	1 lb.
Ling—									
Flesh	59·6	46·7	0·8	11·9	—	0·1			
Skin	5·8	3·9	0·2	1·9	—	0·0			
Hard Roe	7·9	5·4	0·2	1·7	—	0·3			
Waste	26·7	—	—	—	—				
Total (including Skin)	100·0	56·0	1·1	15·5	—	0·4	67·3	19·1	305·3
Total (excluding Skin)	—	52·1	0·9	13·6	—	0·4	50·5	16·9	269·9
Pout Whiting—									
Flesh	50·5	40·3	0·6	9·1	—	0·3			
Skin	4·4	3·0	0·3	1·1	—	0·0			
Liver	0·8	0·4	0·0	0·1	—	0·3			
Waste	44·3	—	—	—	—	—			
Total (including Skin)	100·0	43·7	0·9	10·3	—	0·6	47·8	13·6	216·8
Total (excluding Skin)	—	40·7	0·9	10·2	—	0·3	44·6	12·6	202·3

Conger Eel—									
Flesh	65·3	52·0	0·8	12·5	—	0·1			
Skin...	7·2	4·6	0·1	2·8	—	0·0			
Waste	27·5	—	—	—	—	—			
Total (including Skin)	100·0	56·6	0·9	15·3	—	0·1	63·7	18·1	288·9
Total (excluding Skin)	—	52·0	0·8	12·5	—	0·1	52·2	14·8	236·8
Brill—									
Flesh	58·4	44·4	0·8	11·6	—	1·5			
Black Skin	2·8	1·6	0·1	1·0	—	0·1			
White Skin	2·8	1·6	0·1	0·9	—	0·2			
Soft Roe	0·2	0·2	0·0	0·0	—	0·0			
Waste	35·8	—	—	—	—	—			
Total (including Skin)	100·0	47·8	1·0	13·5	—	1·8	72·1	20·4	327·0
Total (excluding Skin)	—	44·6	0·8	11·6	—	1·5	61·5	17·4	279·0
Dab—									
Flesh	60·2	47·6	0·8	11·0	—	0·7			
Black Skin	4·0	2·6	0·2	1·1	—	0·2			
White Skin	3·3	1·9	0·2	1·0	—	0·2			
Hard Roe	3·1	2·3	0·1	0·7	—	0·0			
Waste	29·4	—	—	—	—	—			
Total (including Skin)	100·0	54·4	1·3	13·8	—	1·1	66·8	18·9	303·0
Total (excluding Skin)	—	49·9	0·9	11·7	—	0·7	54·5	15·5	247·2

FISH.

ANALYSES CALCULATED ACCORDING TO PROPORTIONS OF PARTS—*continued.*

—	Percentage Amount.	Water.	Ash.	Protein.	Carbohydrate.	Fat.	Energy Value. Calories per—		
							100 gm.	1 oz.	1 lb.
Flounder—									
Flesh	46·5	37·8	0·6	7·8	—	0·1			
Black Skin	5·3	3·9	0·1	1·3	—	0·0			
White Skin	4·1	2·9	0·1	1·1	—	0·1			
Waste	44·1	—	—	—	—	—			
Total (including Skin)	100·0	44·6	0·8	10·2	—	0·2	43·7	12·4	198·2
Total (excluding Skin)	—	37·8	0·6	7·8	—	0·1	32·9	9·3	149·2
Halibut—									
Flesh	70·2	55·5	1·0	13·2	—	0·3			
Black Skin	1·9	1·2	0·1	0·6	—	0·0			
White Skin	2·0	1·3	0·0	0·7	—	0·1			
Waste	25·9	—	—	—	—	—			
Total (including Skin)	100·0	58·0	1·1	14·5	—	0·4	63·2	17·9	286·7
Total (excluding Skin)	—	55·5	1·0	13·2	—	0·3	56·9	16·1	258·1

John Dory—									
Flesh	42·1	32·8	0·5	7·8	—	0·5			
Skin	3·5	2·4	0·0	1·0	—	0·1			
Hard Roe	3·2	2·5	0·1	0·5	—	0·1			
Waste	51·2	—	—	—	—	—			
Total (including Skin)	100·0	37·7	0·6	9·3	—	0·7	44·6	12·6	202·3
Total (excluding Skin)	—	35·3	0·6	8·3	—	0·6	39·6	11·2	179·6
Lemon Sole—									
Flesh	55·6	43·9	0·8	10·2	—	0·3			
Black Skin	5·5	3·6	0·2	1·5	—	0·2			
White Skin	4·7	3·0	0·2	1·3	—	0·2			
Hard Roe	6·3	4·8	0·1	1·3	—	0·0			
Waste	27·9	—	—	—	—	—			
Total (including Skin)	100·0	55·3	1·3	14·3	—	0·7	55·1	15·6	249·9
Total (excluding Skin)	—	48·7	0·9	11·5	—	0·3	49·9	14·1	226·3
Plaice—									
Flesh	34·1	27·6	0·3	5·4	—	0·7			
Skin	19·1	11·2	0·3	5·2	—	2·3			
Hard Roe	7·6	4·8	0·1	2·3	—	0·0			
Waste	39·2	—	—	—	—	—			
Total (including Skin)	100·0	43·6	0·7	12·9	—	3·0	80·8	22·9	366·5
Total (excluding Skin)	—	32·4	0·4	7·7	—	0·7	38·1	10·8	172·8

FISH.

ANALYSES CALCULATED ACCORDING TO PROPORTIONS OF PARTS—*continued.*

—	Per centage Amount.	Water.	Ash.	Protein.	Carbo-hydrate.	Fat.	Energy Value. Calories per—		
							100 gm.	1 oz.	1 lb.
Sole—									
Flesh	61·7	48·1	0·7	11·6	—	1·1			
Black Skin	3·1	1·5	0·4	1·2	—	0·0			
White Skin	2·9	1·5	0·2	1·0	—	0·2			
Hard Roe	5·7	3·8	0·1	1·4	—	0·2			
Waste	26·6	—	—	—	—	—			
Total (including Skin)	100·0	54·9	1·4	15·2	—	1·5	76·3	21·6	346·1
Total (excluding Skin)	—	51·9	0·8	13·0	—	1·3	65·4	18·5	296·6
Skate Section—									
Flesh	65·1	50·0	0·7	15·8	—	0·1			
Skin	28·8	21·9	1·0	6·3	—	0·0			
Bone	6·1	—	—	—	—	—			
Total (including Skin)	100·0	71·9	1·7	22·1	—	0·1	91·5	25·9	415·0
Total (excluding Skin)	—	50·0	0·7	15·8	—	0·1	65·7	18·6	298·0

Turbot—									
Flesh	52·3	40·9	0·5	8·8	—	1·3			
Black Skin	3·9	2·5	0·1	1·2	—	0·1			
White Skin	3·4	2·1	0·0	1·1	—	0·1			
Soft Roe	0·4	0·3	0·0	0·0	—	0·0			
Waste	40·0	—	—	—	—	—			
Total (including Skin)	100·0	45·8	0·6	11·1	—	1·5	59·5	16·9	269·9
Total (excluding Skin)	—	41·2	0·5	8·8	—	1·3	48·2	13·7	218·6
Witches—									
Flesh	62·5	50·6	0·4	10·9	—	0·3			
Black Skin	3·8	5·4	0·2	2·1	—	0·1			
White Skin	4·0								
Liver	2·6	—	—	—	—	—			
Waste	27·1	—	—	—	—	—			
Total (including Skin)	100·0	56·0	0·6	13·0	—	0·4	57·0	16·2	258·6
Total (excluding Skin)	—	50·6	0·4	10·9	—	0·3	47·5	13·5	215·5
Eel—									
Flesh	58·8	35·3	0·5	8·3	—	14·6			
Skin	18·0	—	—	—	—	—			
Hard Roe	1·8	1·1	0·0	0·2	—	0·5			
Waste	21·4	—	—	—	—	—			
Total (excluding Skin)	100·0	36·4	0·5	8·5	—	15·1	176·1	49·9	798·8

FISH.

ANALYSES CALCULATED ACCORDING TO PROPORTIONS OF PARTS—*continued.*

—	Percentage Amount.	Water.	Ash.	Protein.	Carbohydrate.	Fat.	Energy Value. Calories per— 100 gm.	1 oz.	1 lb.
Perch—									
Flesh	40·6	32·6	0·4	7·2	—	0·3			
Skin...	10·5	5·5	2·1	2·7	—	0·0			
Hard Roe	16·0	12·3	0·2	2·4	—	0·6			
Liver	1·6	1·3	0·0	0·3	—	0·0			
Waste	31·3	—	—	—	—	—			
Total (including Skin)	100·0	51·7	2·7	12·6	—	0·9	60·0	17·0	272·0
Total (excluding Skin)	—	46·2	0·6	9·9	—	0·9	49·0	13·9	222·3
Brook Trout—									
Flesh	68·0	53·6	0·8	12·8	—	0·8			
Skin	7·3	4·4	0·2	2·5	—	0·2			
Waste	24·7	—	—	—	—	—			
Total (including Skin)	100·0	58·0	1·0	15·3	—	1·0	72·0	20·4	326·6
Total (excluding Skin)	—	53·6	0·8	12·8	—	0·8	59·9	17·0	271·7
Oysters—									
Flesh	10·6	8·2	0·4	0·9	0·8	0·1			
Water	11·1	10·7	0·3	0·1	0·1	0·0			
Waste	78·3	—	—	—	—	—			
Total	100·0	18·9	0·7	1·0	0·9	0·1	8·7	2·5	39·5

Mussels—									
Flesh	24·4	20·6	0·5	2·5	0·6	0·2			
Water	22·2	21·2	0·5	0·4	0·2	0·0			
Waste	53·3	—	—	—	—	—			
Total	99·9	41·8	1·0	2·9	0·8	0·2	17·0	4·8	77·1
Scallops—									
Muscle	13·4	10·6	0·2	2·4	0·1	0·0			
Liver, &c.	4·5	3·5	0·1	0·7	0·2	0·1			
Mantle (waste)	7·5	6·4	0·2	0·9	—	0·0			
Interior Waste	6·2	—	—	—	—	—			
Shell	68·4	—	—	—	—	—			
Total (including Mantle)	100·0	20·5	0·5	4·0	0·3	0·1	18·6	5·3	84·4
Total (excluding Mantle)	—	14·1	0·3	3·1	0·3	0·1	14·9	4·2	67·6
Whelks—									
Flesh	42·1	32·5	1·1	7·4	0·9	0·2			
Waste	57·9	—	—	—	—	—			
Total	100·0	32·5	1·1	7·4	0·9	0·2	35·9	10·2	162·8
Winkles—									
Flesh	22·3	16·1	0·6	4·0	1·1	0·5			
Shell	77·7	—	—	—	—	—			
Total	100·0	16·1	0·6	4·0	1·1	0·5	25·6	7·3	116·1
Cockles—									
Salted, Unwashed	100·0	55·2	23·6	13·0	7·9	0·3	88·5	25·1	401·4
,, ,,	100·0	53·9	26·3	13·3	6·1	0·4	83·3	23·6	377·8
,, Washed	100·0	61·8	18·0	13·9	5·8	0·5	85·4	24·2	387·4

FISH.

ANALYSES CALCULATED ACCORDING TO PROPORTIONS OF PARTS—*continued.*

—	Percentage Amount.	Water.	Ash.	Protein.	Carbohydrate.	Fat.	Energy Value. Calories per—		
							100 gm.	1 oz.	1 lb.
Crab—									
Flesh	26·2	19·3	0·7	5·9	0·3	0·0			
Liver, &c.	14·4	10·0	0·8	1·9	0·7	1·1			
Waste and Shell	59·4	—	—	—	—	—			
Total	100·0	29·3	1·5	7·8	1·0	1·1	46·3	13·1	210·0
Lobster—									
Flesh	53·9	40·4	1·7	10·6	1·0	0·2			
Liver, &c.	5·1	3·2	0·2	0·7	0·5	0·7			
Waste and Shell	41·0	—	—	—	—	—			
Total	100·0	43·6	1·9	11·3	1·5	0·9	60·9	17·3	276·2
Shrimps—									
Flesh	47·2	31·9	3·3	10·9	0·7	0·4			
Shell	52·8	—	—	—	—	—			
Total	100·0	31·9	3·3	10·9	0·7	0·4	51·3	14·5	232·7
Prawns—									
Flesh	46·0	32·8	2·4	10·5	0·0	0·6			
Shell	54·0	—	—	—	—	—			
Total	100·0	32·8	2·4	10·5	0·0	0·6	48·6	13·8	220·5

FRESH VEGETABLES.

The common vegetables can be conveniently divided into several groups, such as root, leaf, fruit, leguminous, etc. Such a division makes the members of a group easily comparable. All the common vegetables, except beet spinach, were obtained. Beet spinach unfortunately could not be procured at the time these analyses were being made.

The whole vegetable, as purchased, is not usually eaten, so that, before analysis, the various parts were separated as far as possible. These parts were weighed, and in nearly every case the separate parts were analysed. The food value of the whole vegetable, as purchased, is calculated from the proportions of the parts and the analytical data. Further, the same calculations give the food value of the edible portion allowing for the remainder as waste. The vegetables were procured as often as possible in the whole condition, *e.g.*, turnips and other root vegetables, though the leafy portion is generally removed before the vegetable is sold on the market. The food value of the whole plant is then obtained.

Generally only one analysis of each vegetable was made, but in some cases separate analyses were made of more than one specimen. These analyses show distinct differences (see carrots, parsnips, radish, cabbage). This is partly accounted for by the weather at the time these vegetables were marketed. During periods of wet weather, though no rain fell at the time of collecting, the vegetables contained more water. Variations must also occur depending upon the nature of the soil on which the vegetable is grown and general climate. In a few cases, such as potatoes, peas, beans, marrows, analyses of the cooked vegetable have been made, as well as of the raw vegetable. The results show that a distinct, though small, loss occurs in cooking. Excepting tubers and roots, the energy value of vegetables is very small. The chief value of vegetables, especially if they are not cooked for a long period, is in the supply of the accessory food factors. Cabbage and swedes are particularly valuable in preventing scurvy (see appendix, p. 255).

PROPORTIONS OF PARTS.

Green Peas.

	Gm.	Percentage.
Kernel	72	30·5
Skin	28	12·0
Pods	124	52·5
Waste	12	5·0
Total	236	100·0

Green Peas.

	Gm.	Percentage
Kernel	72	72·0
Skin	28	28·0
Total	100	100·0

FRESH VEGETABLES.

Proportions of Parts—*continued.*

Broad Beans.

	Gm.	Percentage.
Kernel	64	23·7
Skin	33	12·2
Pods	173	64·1
Total	270	100·0

	Gm.	Percentage.
Kernel	64	66·0
Skin	33	34·0
Total	97	100·0

Scarlet Runner Beans.

	Gm.	Percentage.
Edible	222	91·7
Waste	20	8·3
Total	242	100·0

French Beans.

	Gm.	Percentage.
Edible	225	91·1
Waste	22	8·9
Total	247	100·0

White Wax or Butter Beans.

	Gm.	Percentage.
Edible	80·5	97·0
Waste	2·5	3·0
Total ...	83·0	100·0

Uncooked Potatoes, New.

	Gm.	Percentage.
Tuber	794	97·4
Skin	21	2·6
Total	815	100·0

Uncooked Potatoes, Old.

	Gm.	Percentage.
Tuber	175	92·1
Skin	15	7·9
Total	190	100·0

Cooked Potatoes, New.

	Gm.	Percentage.
Tuber	383	95·8
Skin	17	4·2
Total	400	100·0

Cooked Potatoes, Old.

	Gm.	Percentage.
Tuber	207	92·0
Skin	18	8·0
Total	225	100·0

Jerusalem Artichoke.

	Gm.	Percentage.
Edible part ...	1,000	40·0
Stems and roots ...	1,500	60·0
Total	2,500	100·0

Radish.

	Gm.	Percentage.
Edible part ...	15	45·5
Leaf	17	51·5
Rootlets	1	3·0
Total	33	100·0

	Gm.	Percentage.
Edible part ...	152	27·8
Leaf and rootlets ...	395	72·2
Total	547	100·0

Turnips.

	Gm.	Percentage.
Leaves	368	39·6
Edible part Scrapings } ...	562	60·4
Total	930	100·0

	Gm.	Percentage.
Edible part ...	362	87·4
Scrapings	52	12·6
Total	414	100·0

Kohlrabi.

	Gm.	Percentage.
Leaf and stalk	340	40·4
Edible part ...	385	45·7
Scrapings	117	13·9
Total	842	100·0

	Gm.	Percentage.
Edible part ...	385	76·7
Scrapings	117	23·3
Total	502	100·0

FRESH VEGETABLES.

PROPORTIONS OF PARTS—*continued.*

	Gm.	Per-centage.
Swedes.		
Leaf	325	37·8
Edible part	452	52·6
Scrapings	83	9·6
Total	860	100·0
Edible part	452	84·5
Scrapings	83	15·5
Total	535	100·0
Beetroot.		
Leaf, &c.	312	37·6
Edible part	515	62·1
Rootlets	2	0·3
Total	829	100·0
Carrots.		
Leaf	56	20·0
Root	225	80·0
Total	281	100·0
Parsnip.		
Leaf	103	35·3
Edible part	164	56·1
Scrapings and rootlets	25	8·6
Total	292	100·0
Edible part	164	86·8
Scrapings	25	13·2
Total	189	100·0
Salsify.		
Leaf	262	45·8
Edible part	271	47·4
Scrapings and rootlets	39	6·8
Total	572	100·0
Edible part	271	87·4
Scrapings	39	12·6
Total	310	100·0

	Gm.	Per-centage.
Scorzonera.		
Leaf	650	88·4
Edible part	68	9·2
Scrapings	17	2·4
Total	735	100·0
Edible part	68	80·0
Scrapings	17	20·0
Total	85	100·0
Cauliflower.		
Flower	238	45·5
Inside leaf, edible	35	6·7
Waste leaf and stem	250	47·8
Total	523	100·0
Green Artichoke.		
Waste leaf	142	68·0
Edible leaf	39	18·6
" Fond "	28	13·4
Total	209	100·0
Marrow, Green.		
Edible part	775	67·4
Seed part	200	17·4
Skin	175	15·2
Total	1,150	100·0
Marrow, Yellow.		
Edible part	775	55·4
Seed part	350	25·0
Skin	275	19·6
Total	1,400	100·0
Aubergine or Egg Plant.		
(1) Edible	185	100·0
(2) Edible	177	100·0
Cucumber.		
Edible part	309	82·6
Skin	65	17·4
Total	374	100·0
Tomatoes.		
Edible		100·0

FRESH VEGETABLES.

PROPORTIONS OF PARTS—*continued.*

English Onions.

	Gm.	Percentage.
Edible part	470	95·5
Outer skin	22	4·5
Total	492	100·0

Leek.

Leaf	140	55·6
Edible part	110	43·6
Rootlets	2	0·8
Total	252	100·0

Spanish Onions.

	Gm.	Percentage.
Edible part	484	98·0
Outer skin	10	2·0
Total	494	100·0

Garlic.

Edible part	78	91·8
Skin	7	8·2
Total	85	100·0

Asparagus.

	Gm.	Percentage.
Edible part	174	42·8
Waste stalk	233	57·2
Total	407	100·0

Seakale.

Edible part	175	77·1
Root and waste	52	22·9
Total	227	100·0

Rhubarb.

Edible part	436	82·1
Leaf and waste	95	17·9
Total	531	100·0

Celery.

	Gm.	Percentage.
Edible stalk and leaf	515	88·5
Waste leaf	67	11·5
Total	582	100·0

Mushroom.

Edible part	178	79·4
Stalk	27	12·0
Skin	19	8·6
Total	224	100·0

Lettuce.

	Gm.	Percentage.
Edible part	278	63·5
Outside leaf and stalk	160	36·5
Total	438	100·0

Batavia.

Edible part	357	54·0
Outside leaves	280	42·3
Root	24	3·7
Total	661	100·0

Endive.

Edible inside leaves	193	73·6
Outside leaves and stalk	69	26·4
Total	262	100·0

Watercress.

	Gm.	Percentage.
Leaves	75	50·0
Large stalk	75	50·0
Total	150	100·0

Corn Salad.

Leaf	37·0	96·1
Roots	1·5	3·9
Total	38·5	100·0

Parsley.

Leaf	57	72·2
Stalk	22	27·8
Total	79	100·0

FRESH VEGETABLES.

PROPORTIONS OF PARTS—*continued.*

Cabbage.

	Gm.	Percentage.
(1) Inside leaves	775	62·0
Outside leaves and stalk ...	475	38·0
Total	1,250	100·0
(2) Inside leaves ...	740	48·4
Outside leaves and stalk ...	790	51·6
Total	1,530	100·0

Brussels Sprouts.

	Gm.	Percentage.
Edible part ...	195	76·8
Outside leaves and stalk	59	23·2
Total	254	100·0

Savoy Cabbage.

	Gm.	Percentage.
Inside leaves ...	282	56·9
Outside leaves and stalk	214	43·1
Total	496	100·0

Red Cabbage.

	Gm.	Percentage.
Inside leaves ...	795	57·4
Outside leaves and stalk	590	42·6
Total	1,385	100·0

Perpetual Spinach.

	Gm.	Percentage.
Leaf	86	70·5
Stalk	36	29·5
Total	122	100·0
Spinach leaf ...	—	100·0

Sprouting Broccoli.

	Gm.	Percentage.
Leaf	180	87·0
Stalk	27	13·0
Total	207	100·0

Curly Kale.

	Gm.	Percentage.
Leaf	56	69·1
Stalk and root ...	25	30·9
Total	81	100·0

Thousand Heads.

	Gm.	Percentage.
Leaf	112	56·5
Stem	72	36·4
Main stalk ...	14	7·1
Total	198	100·0

FRESH VEGETABLES.

ANALYTICAL DATA.

(*A*).—*Legumes.*

—	Water.	Ash.	Fibre.	Protein.	Carbo-hydrate by diff.	Fat.	Energy Value.—Calories per—		
							100 gm.	1 oz.	1 lb.
Green Peas, Raw—									
Kernel	75·0	0·9	0·2	6·5	16·8	0·6	101·1	28·7	458·6
Skin...	78·8	1·1	6·3	2·6	11·0	0·2	57·6	16·3	261·3
Pod	87·4	0·5	2·8	1·8	7·5	—	38·1	10·8	172·8
Green Peas, Boiled									
Kernel	78·5	0·9	0·5	5·1	14·3	0·7	79·4	22·5	360·2
Skin	78·0	1·0	6·7	3·3	10·7	0·3	60·2	17·1	273·1
Broad Beans, Raw—									
Kernel	65·5	1·4	0·5	9·4	22·8	0·4	135·7	38·5	615·5
Skin...	78·6	1·0	6·6	2·1	11·6	0·1	57·1	16·2	259·0
Pod	85·7	0·7	1·5	1·5	10·5	0·1	50·1	14·2	227·2
Broad Beans, Boiled—									
Kernel	76·0	1·1	0·4	7·2	15·0	0·3	93·8	26·6	425·5
Skin...	73·9	1·3	8·5	4·0	12·2	0·1	67·4	19·1	305·7
French Beans—									
Edible part...	91·5	0·7	1·0	1·9	4·8	0·1	28·4	8·1	128·8
Scarlet Runner Beans—									
Edible part...	93·2	0·7	0·8	1·3	3·9	0·1	22·3	6·3	101·2
White Wax or Butter Beans—									
Edible part...	90·7	0·7	0·8	2·1	5·6	0·1	32·5	9·2	147·4

(*B*).—*Tubers and Roots.*

Potatoes Raw, New—									
Tuber	76·2	0·8	0·4	1·6	21·0	0·02	92·8	26·3	420·9
Skin	80·3	4·0	4·6	2·8	7·9	0·4	47·6	13·5	215·9
Potatoes, Raw, Old—									
Tube	76·1	1·4	0·8	2·1	19·6	0·03	89·3	25·3	405·1
Skin	76·1	4·9	4·7	2·9	11·1	0·3	60·2	17·1	273·1
Potatoes, Boiled, New—									
Tuber	77·7	0·8	0·4	1·4	19·7	0·01	86·6	24·5	392·8
Skin...	66·6	2·3	3·6	3·7	23·5	0·3	114·3	32·4	518·5
Potatoes, Boiled, Old—									
Tuber	80·5	1·0	0·6	1·9	16·0	0·02	73·6	20·9	333·9
Skin	76·4	2·1	2·7	2·7	15·9	0·2	78·1	22·1	354·3
Artichoke, Jerusalem—									
Tuber	79·7	1·3	0·7	1·9	17·4	0·03	79·4	22·5	360·2
Beetroot—									
Leaf	90·1	2·1	1·2	1·9	4·5	0·2	28·1	8·0	127·5
Edible root	90·2	1·3	1·0	1·2	6·2	0·1	31·3	8·9	142·0
Carrot—									
(1) Edible part	89·4	0·7	0·9	0·9	8·0	0·1	37·4	10·6	169·6
(2) Edible part	84·7	1·1	1·4	1·5	11·2	0·1	53·0	15·0	240·4
Mean	87·0	0·9	1·1	1·2	9·6	0·1	45·2	12·8	205·0
Leaf	79·8	3·0	2·4	2·4	12·1	0·3	62·2	17·6	282·1
Kohlrabi—									
Edible part...	91·4	1·2	0·7	2·2	4·5	0·03	27·7	7·9	125·6
Skin	84·7	1·9	2·3	3·2	7·8	0·1	46·0	13·0	208·7
Leaf and stalk	85·1	3·1	2·0	2·5	6·9	0·4	42·3	12·0	191·9
Parsnip—									
(1) Edible part	72·6	1·1	3·0	1·7	21·1	0·5	98·1	27·8	445·0
Scrapings	76·0	2·7	4·5	1·5	15·1	0·2	69·9	19·8	317·1
Leaf	82·3	3·0	2·5	1·6	10·3	0·3	51·6	14·6	234·1
(2) Whole root	76·8	1·0	1·4	1·9	18·4	0·5	87·9	24·9	398·7

FRESH VEGETABLES.

Analytical Data—*continued.*

(*B*).—*Tubers and Roots*—continued.

—	Water.	Ash.	Fibre.	Protein.	Carbohydrate by diff.	Fat.	Energy Value. Calories per—		
							100 gm.	1 oz.	1 lb.
Radish—									
(1) Edible part	93·6	0·8	1·1	1·0	3·4	0·1	19·0	5·4	86·2
Leaf	90·4	2·2	2·5	2·6	2·2	0·1	20·6	5·8	93·4
(2) Edible part	94·7	0·8	0·6	0·6	3·26	0·04	16·2	4·6	73·5
Leaf and rootlets	90·8	2·4	1·4	2·3	2·7	0·4	24·2	6·9	109·8
Salsify—									
Edible part root	76·4	1·2	1·6	2·8	17·9	0·1	85·8	24·3	389·2
Scrapings	76·5	4·2	2·8	2·7	12·5	1·3	74·4	21·1	337·5
Leaf..	84·8	2·5	2·0	2·4	7·6	0·7	47·5	13·5	215·5
Scorzonera—									
Edible part root	72·8	0·9	2·3	3·9	19·9	0·2	99·4	28·2	450·9
Scrapings	66·4	3·7	3·2	2·3	23·6	0·8	113·6	32·2	513·3
Swede—									
Edible part	88·8	0·6	1·4	1·0	8·1	0·1	38·2	10·8	173·3
Skin and rootlets...	85·1	1·6	2·1	2·6	8·5	0·1	46·4	13·2	210·5
Leaf...	87·7	1·7	1·4	2·2	6·7	0·3	39·3	11·1	178·3
Turnip—									
Inside edible part...	93·0	0·7	0·6	1·2	4·4	0·1	23·9	6·8	108·4
Scrapings	88·5	2·5	1·8	2·5	4·6	0·1	30·0	8·5	136·1
Leaves	88·4	2·5	1·7	2·4	4·8	0·2	31·4	8·9	142·4

(*C*).—*Bulbs, etc.*

Garlic—									
Edible part...	63·9	1·4	0·9	4·7	29·0	0·1	139·1	39·4	631·0
Skin	14·2	6·0	30·2	2·0	46·9	0·7	207·0	58·7	939·0
Leek—									
Edible part...	85·3	1·1	1·7	2·5	9·3	0·1	49·5	14·0	224·5
Leaf	88·9	1·8	1·7	1·8	5·6	0·2	32·2	9·1	146·1
Rootlets	47·6	8·2	10·4	7·7	25·7	0·4	140·7	39·9	638·2
Onions, English—									
Edible part...	86·7	0·5	0·6	1·3	10·8	0·1	50·5	14·3	229·1
Outer skin	61·2	8·5	11·1	1·5	17·2	0·5	81·3	23·1	368·8
Onions, Spanish—									
Edible part..	94·2	0·4	0·7	0·6	4·1	0·04	19·6	5·6	88·9
Outer skin	50·8	4·5	13·0	1·9	28·8	1·0	135·2	38·3	613·2

(*D*).—*Flowers and Fruits.*

Artichoke, Green—									
" Fond "	86·0	1·3	1·8	3·5	7·3	0·1	45·2	12·8	205·0
Edible part leaf	78·4	1·2	4·2	2·0	14·2	0·0	66·4	18·8	301·2
Waste leaf	82·6	1·4	6·2	2·4	7·4	0·0	40·2	11·4	182·3
Aubergine or Egg Plant—									
Whole	93·1	0·5	1·4	0·6	4·3	0·1	21·0	6·0	95·3

FRESH VEGETABLES.

ANALYTICAL DATA—*continued.*

(*D*).—*Flowers and Fruits*—continued.

—	Water.	Ash.	Fibre.	Protein.	Carbo-hydrate by diff.	Fat.	Energy Value, Calories per—		
							100 gm.	1 oz.	1 lb.
Cauliflower—									
Flower and edible leaf	90·2	0·9	0·9	1·9	5·9	0·2	33·8	9·6	153·3
Stalk and waste leaf	89·4	1·1	1·6	1·1	6·7	0·1	32·9	9·3	149·2
Cucumber—									
Edible part...	96·7	0·4	0·2	0·6	2·0	0·07	11·3	3·2	51·3
Skin	95·0	0·9	0·7	0·8	2·5	0·1	14·5	4·1	65·8
Marrow, Raw, Green—									
Edible aprt...	93·0	0·4	0·6	0·4	5·2	0·05	23·4	6·6	106·1
Seed part	91·9	0·6	0·8	1·2	5·4	0·1	28·0	7·9	127·0
Skin	88·9	0·6	2·7	1·4	6·2	0·2	33·0	9·4	149·7
Marrow, Raw, Yellow—									
Edible part...	96·8	0·3	0·4	0·2	2·2	0·06	10·4	2·9	47·2
Seed part	92·8	0·7	0·8	1·3	4·3	0·1	23·9	6·8	108·4
Skin	95·5	0·5	0·8	0·7	2·4	0·1	13·6	3·8	61·7
Marrow, Boiled, Green—									
Edible part...	93·3	0·5	0·8	0·4	5·0	0·04	22·5	6·4	102·1
Marrow, Boiled, Yellow—									
Edible part...	96·3	0·6	0·5	0·3	2·3	0·03	10·9	3·1	49·4
Tomatoes—									
Whole	93·5	0·5	0·7	0·7	4·5	0·1	22·2	6·3	100·7

(*E*).—*Stalks, etc.*

Asparagus—									
Edible part	90·8	0·9	0·9	3·1	4·25	0·05	30·6	8·7	138·8
Stalk	90·6	0·8	1·9	1·8	4·81	0·09	27·9	7·9	126·5
Celery—									
Edible part, stalk	93·7	1·0	0·8	0·6	3·8	0·1	19·0	5·4	86·2
Leaf waste	89·6	1·5	1·1	2·0	5·7	0·1	32·5	9·2	147·4
Rhubarb—									
Edible part	94·4	0·7	0·6	0·6	3·63	0·07	18·0	5·0	81·6
Leaf, etc.	91·5	1·1	0·7	1·6	5·05	0·05	27·7	7·8	125·6
Seakale—									
Edible part	93·4	0·5	0·8	1·5	3·77	0·03	21·9	6·2	99·3
Root and waste	88·7	1·0	1·4	2·2	6·63	0·07	36·8	10·4	166·9
Mushroom—									
Flesh	91·3	1·1	0·9	4·5	2·0	0·2	28·5	8·1	129·3
Stalk	90·9	1·0	1·0	4·4	2·6	0·1	29·6	8·4	134·3
Skin	85·3	1·7	1·7	6·9	4·2	0·2	47·4	13·4	215·0

(*F*).—*Leaves (as Salads).*

Batavia—									
Edible part	93·1	1·0	1·1	1·4	3·3	0·1	20·2	5·7	91·6
Outside leaf and stalk	92·9	1·7	0·8	0·8	3·7	0·1	19·4	5·5	88·0
Corn Salad—									
Leaf	92·2	1·7	1·1	1·8	3·0	0·2	21·5	6·1	97·5
Cress—									
Whole	93·0	1·5	1·2	2·1	1·8	0·4	19·7	5·6	89·4

FRESH VEGETABLES.

ANALYTICAL DATA—*continued.*

(*F*).—*Leaves* (*as Salads*)—continued.

—	Water.	Ash.	Fibre.	Protein.	Carbo-hydrate by diff.	Fat.	Energy Value. Calories per—		
							100 gm.	1 oz.	1 lb.
Endive—									
Inside edible part	93·4	1·1	0·8	1·7	2·9	0·1	19·8	5·6	89·8
Outside leaf	92·1	2·2	1·6	1·4	2·6	0·1	17·3	4·9	78·5
Lettuce—									
Inside edible part	95·4	0·8	0·6	1·1	1·9	0·2	14·2	4·0	64·4
Outside leaf and stalk	94·8	1·3	0·7	0·7	2·3	0·2	14·2	4·0	64·4
Mustard—									
Whole	94·2	1·3	0·6	1·4	2·1	0·4	18·1	5·1	82·1
Whole	95·7	1·0	0·5	1·1	1·4	0·3	13·0	3·7	59·0
Whole mean	95·0	1·1	0·5	1·3	1·8	0·3	15·5	4·4	70·3
Parsley—									
Leaf	78·8	2·9	2·2	3·8	11·6	0·7	69·7	19·8	316·2
Stalk	80·6	2·9	3·0	1·4	11·8	0·3	56·9	16·1	258·1
Watercress—									
Leaf part	92·5	1·0	0·5	1·4	4·2	0·4	26·7	7·6	121·1
Stalk part	95·3	0·9	0·6	1·2	1·8	0·2	14·2	4·0	64·4

(*G*).—*Leaves.*

Brussels Sprouts—									
Inside edible part	88·3	1·1	1·1	3·6	5·7	0·2	40·0	11·3	181·4
Outside	86·8	1·6	1·8	3·4	6·2	0·2	41·2	11·7	186·9
Cabbage—									
(1) Edible part	92·6	0·6	0·8	1·4	4·5	0·1	25·1	7·1	113·8
(2) Inside edible part	88·4	0·8	1·1	1·5	8·1	0·1	40·3	11·4	182·8
Outside part	86·4	1·4	1·6	1·1	9·3	0·2	44·5	12·6	201·9
Cabbage, Red—									
Inside edible part	89·3	1·0	0·9	2·2	6·5	0·1	36·6	10·4	166·0
Outside part	85·2	1·9	1·9	2·8	8·0	0·2	46·1	13·1	209·1
Cabbage, Savoy—									
Inside edible part	90·2	1·0	1·0	2·6	5·1	0·1	32·5	9·2	147·4
Outside part	88·3	1·6	2·0	1·8	6·1	0·2	34·3	9·7	155·6
Curly Kale—									
Edible part...	83·3	2·2	1·4	3·9	8·8	0·4	55·8	15·8	253·1
Spinach—									
Leaves, edible part	92·8	1·8	0·5	1·8	2·9	0·2	21·1	6·0	95·7
Spinach, Perpetual—									
Leaf, edible part	93·4	1·5	0·7	1·7	2·6	0·1	18·6	5·3	84·4
Stalk	92·6	2·0	0·6	0·9	3·8	0·1	20·2	5·7	91·6
Sprouting Broccoli—									
Edible part...	79·0	2·5	1·9	4·7	11·5	0·4	70·1	19·9	318·0
Thousand Heads—									
Edible part, leaf	81·0	2·0	1·7	4·5	10·4	0·4	64·8	18·4	293·9
Stalk	84·7	1·3	1·8	2·7	9·4	0·1	50·5	14·3	229·1

FRESH VEGETABLES.

CALCULATION OF ANALYTICAL DATA SHOWING FIGURES FOR EDIBLE PART, WHOLE VEGETABLE, AND ALLOWANCE FOR WASTE.

(A).—Legumes.

—	Percentage Amount.	Water.	Ash.	Fibre.	Protein.	Carbohydrate.	Fat.	Energy Value. Calories per—		
								100 gm.	1 oz.	1 lb.
Green Peas, Raw—										
Kernel	72·0	54·0	0·7	0·1	4·7	12·1	0·4			
Skin	28·0	22·1	0·3	1·8	0·7	3·1	0·1			
Whole Pea as eaten ...	100·0	76·1	1·0	1·9	5·4	15·2	0·5	89·1	25·2	404·2
Green Peas, Boiled—										
Kernel	72·0	56·5	0·7	0·4	3·7	10·3	0·5			
Skin	28·0	21·8	0·3	1·9	0·9	3·0	0·1			
Whole Pea as eaten ...	100·0	78·3	1·0	2·3	4·6	13·3	0·6	79·0	22·4	358·3
Broad Beans, Raw—										
Kernel	66·0	43·2	0·9	0·3	6·2	15·1	0·3			
Skin	34·0	26·7	0·3	2·2	0·7	3·9	0·0			
Whole Bean as eaten ...	100·0	69·9	1·2	2·5	6·9	19·0	0·3	109·0	30·9	494·4
Broad Beans, Boiled—										
Kernel	66·0	50·2	0·7	0·3	4·7	9·9	0·2			
Skin	34·0	25·1	0·4	2·9	1·4	4·2	0·0			
Whole Bean as eaten ...	100·0	75·3	1·1	3·2	6·1	14·1	0·2	84·7	24·0	384·2

Green Peas, Raw—									
Kernel	30·5	22·9	0·3	0·1	2·0	5·1	0·2		
Skin	12·0	9·5	0·1	0·8	0·3	1·3	0·0		
Pod	52·5	45·9	0·3	1·5	1·0	3·9	—		
Waste	5·0	—	—	—	—	—	—		
Whole Plant as purchased	100·0	78·3	0·7	2·4	3·3	10·3	0·2	57·6	16·3	261·3
Broad Beans, Raw—									
Kernel	23·7	15·5	0·3	0·1	2·2	5·4	0·1		
Skin	12·2	9·6	0·1	0·8	0·3	1·4	0·0		
Pod	64·1	54·9	0·5	1·0	1·0	6·7	0·1		
Whole Plant as purchased	100·0	80·0	0·9	1·9	3·5	13·5	0·2	71·6	20·3	324·8
Edible Part, allowing for waste—									
Green Peas	42·5	32·3	0·4	0·8	2·3	6·5	0·2	37·9	10·7	171·9
Broad Beans	35·9	25·1	0·4	0·9	2·5	6·8	0·1	39·1	11·1	177·4
Scarlet Runner Beans	91·7	85·5	0·6	0·7	1·2	3·6	0·1	20·6	5·8	93·4
French Beans	91·1	83·4	0·6	0·9	1·7	4·4	0·1	25·9	7·3	117·5
White Wax or Butter Beans	97·0	88·0	0·7	0·8	2·0	5·4	0·1	30·3	8·6	137·4

(*B*).—*Tubers and Roots.*

Potatoes, Raw, New—									
Tuber	97·4	74·2	0·8	0·4	1·6	20·4	0·02	90·4	25·6	410·0
Skin	2·6	2·1	0·1	0·1	0·1	0·2	0·01		
Whole	100·0	76·3	0·9	0·5	1·7	20·6	0·03	91·7	26·0	415·9

FRESH VEGETABLES.

Calculation of Analytical Data showing Figures for Edible Part, Whole Vegetable and Allowance for Waste—*continued.*

(*B*).—*Tubers and Roots*—continued.

—	Percentage Amount.	Water.	Ash.	Fibre.	Protein.	Carbohydrate.	Fat.	Energy Value. Calories per—		
								100 gm.	1 oz.	1 lb.
Potatoes, Boiled, New—										
Tuber	95·8	74·4	0·8	0·4	1·3	18·9	0·01	82·9	23·5	376·0
Skin	7·9	2·8	0·1	0·1	0·2	1·0	0·01			
Whole	100·0	77·2	0·9	0·5	1·5	19·9	0·02	87·9	24·9	398·7
Potatoes, Raw, Old—										
Tuber	92·1	70·1	1·3	0·7	1·9	18·1	0·03	82·3	23·3	373·3
Skin	7·9	6·0	0·4	0·4	0·2	0·9	0·02			
Whole	100·0	76·1	1·7	1·1	2·1	19·0	0·05	87·0	24·7	394·6
Potatoes, Boiled, Old—										
Tuber	92·0	74·1	0·9	0·6	1·8	14·7	0·02	67·8	19·2	307·5
Skin	8·0	6·1	0·2	0·2	0·2	1·3	0·02			
Whole	100·0	80·2	1·1	0·8	2·0	16·0	0·04	74·2	21·0	336·6

Beetroot—										
Edible part root	62·1	56·0	0·8	0·6	0·7	3·8	0·06	19·0	5·4	86·2
Leaf	37·6	33·9	0·8	0·4	0·7	1·7	0·07			
Rootlets	0·3	—	—	—	—	—	—			
Whole plant	100·0	89·9	1·6	1·0	1·4	5·5	0·13	29·5	8·4	133·8
Carrot (2)—										
Root	80·0	67·8	0·9	1·1	1·2	9·0	0·08	42·6	12·1	193·2
Leaf	20·0	16·0	0·6	0·5	0·5	2·4	0·06			
Whole plant	100·0	83·8	1·5	1·6	1·7	11·4	0·14	55·0	15·6	249·5
Kohlrabi—										
Edible part root	76·7	70·1	0·9	0·5	1·7	3·4	0·02	21·1	6·0	95·7
Scrapings	23·3	19·7	0·4	0·4	0·8	1·8	0·02			
Whole root	100·0	89·8	1·3	0·9	2·5	5·2	0·04	31·9	9·1	144·7
Root from above	59·6	53·5	0·8	0·5	1·5	3·1	0·02			
Leaf and stalk	40·4	34·4	1·2	0·8	1·0	2·8	0·2			
Whole plant	100·0	87·9	2·0	1·3	2·5	5·9	0·22	36·5	10·4	165·6
Parsnip—										
(1) Edible part root	86·8	63·0	0·9	2·6	1·5	18·3	0·4	84·9	24·1	385·1
Scrapings	13·2	10·0	0·4	0·6	0·2	2·0	0·03			
Whole root	100·0	73·0	1·3	3·2	1·7	20·3	0·43	94·2	26·7	427·3
(2) Whole root	—	76·8	1·0	1·4	1·9	18·4	0·5	87·9	24·9	398·7
Mean...	—	74·9	1·2	2·3	1·8	19·4	0·47	91·0	25·8	413·0

FRESH VEGETABLES.

Calculation of Analytical Data showing Figures for Edible Part, Whole Vegetable and Allowance for Waste—*continued.*

(*B*).—*Tubers and Roots*—continued.

—	Per-centage Amount.	Water.	Ash.	Fibre.	Protein.	Carbo-hydrate.	Fat.	Energy Value.—Calories per—		
								100 gm.	1 oz.	1 lb.
Parsnip—										
Root (1) above	64·7	47·2	0·8	2·1	1·1	13·1	0·3			
Leaf	35·3	29·1	1·1	0·9	0·6	3·6	0·1			
Whole Plant	100·0	76·3	1·9	3·0	1·7	16·7	0·4	79·2	22·4	359·2
Radish—										
Edible part root	45·5	42·6	0·4	0·5	0·5	1·5	0·05	8·7	2·5	39·5
Leaf	51·5	46·6	1·1	1·3	1·3	1·1	0.05			
Rootlets	3·0	—	—	—	—	—	—			
Whole plant	100·0	89·2	1·5	1·8	1·8	2·6	0·1	19·0	5·4	86·2
Edible part root	27·8	26·3	0·2	0·2	0·2	0·9	0·01	4·6	1·3	20·9
Leaf and rootlets	72·2	65·6	1·7	1·0	1·7	1·9	0·30			
Whole plant	100·0	91·9	1·9	1·2	1·9	2·8	0·31	22·1	6·3	100·2

Salsify—									
Edible part root	87·4	66·8	1·0	1·4	2·4	15·6	0·09	74·6	21·2	338·4
Scrapings	12·6	9·6	0·5	0·4	0·3	1·6	0·16			
Whole root	100·0	76·4	1·5	1·8	2·7	17·2	0·25	83·9	23·8	380·6
Whole root above	54·2	41·4	0·8	1·0	1·5	9·3	0·13			
Leaf	45·8	38·8	1·1	0·9	1·1	3·5	0·32			
Whole plant	100·0	80·2	1·9	1·9	2·6	12·8	0·45	67·3	19·1	305·3
Scorzonera—										
Edible part root	80·0	58·2	0·7	1·8	3·1	15·9	0·16	79·4	22·5	360·2
Scrapings	20·0	13·3	0·7	0·6	0·5	4·7	0·16			
Whole root	100·0	71·5	1·4	2·4	3·6	20·6	0·32	102·2	29·0	463·6
Swede—										
Edible part root	84·5	75·0	0·5	1·2	0·8	6·8	0·08	31·9	9·0	144·7
Scrapings	15·5	13·2	0·3	0·3	0·4	1·3	0·02			
Whole root	100·0	88·2	0·8	1·5	1·2	8·1	0·1	39·1	11·1	177·4
Whole root above	62·2	54·9	0·5	0·9	0·7	5·0	0·06			
Leaf	37·8	33·1	0·6	0·5	0·8	2·5	0·11			
Whole plant	100·0	88·0	1·1	1·4	1·5	7·5	0·17	38·5	10·9	174·6

FRESH VEGETABLES.

CALCULATION OF ANALYTICAL DATA SHOWING FIGURES FOR EDIBLE PART, WHOLE VEGETABLE AND ALLOWANCE FOR WASTE—*continued.*

(*B*).—*Tubers and Roots*—continued.

—	Percentage Amount	Water.	Ash.	Fibre.	Protein.	Carbohydrate.	Fat.	Energy Value.—Calories per—		
								100 gm.	1 oz.	1 lb.
Turnip—										
(1) Edible part root	87·4	81·3	0·6	0·5	1·1	3·8	0·09	20·9	5·9	94·8
Scrapings	12·6	11·1	0·3	0·2	0·3	0·6	0·01			
Whole root	100·0	92·4	0·9	0·7	1·4	4·4	0·1	24·7	7·0	112·0
(2) Leaf	39·6	35·0	0·1	0·7	0·9	1·9	0·08			
Whole root as above ...	60·4	55·8	0·5	0·4	0·8	2·7	0·06			
Whole plant	100·0	90·8	0·6	1·1	1·7	4·6	0·14	27·1	7·7	122·9
(*C*).—*Bulbs, etc.*										
Garlic—										
Skin	8·2	1·2	0·5	2·5	0·2	3·8	0·06			
Edible part	91·8	58·7	1·3	0·8	4·3	26·6	0·09	127·5	36·2	578·3
Whole	100·0	59·9	1·8	3·3	4·5	30·4	0·15	144·5	41·0	655·5

Leek—										
Edible part	43·6	37·2	0·5	0·7	1·1	4·1	0·04	21·7	6·2	98·4
Leaf	55·6	49·4	1·0	0·9	1·0	3·1	0·11			
Rootlets	0·8	0·4	0·1	0·1	0·1	0·2	0·00			
Whole plant	100·0	87·0	1·6	1·7	2·2	7·4	0·15	40·8	11·6	185·1
Onions, English—										
Skin	4·5	2·8	0·4	0·5	0·07	0·8	0·02			
Inside edible part	95·5	82·8	0·5	0·6	1·23	10·3	0·10	48·2	13·7	218·6
Whole	100·0	85·6	0·9	1·1	1·3	11·1	0·12	52·0	14·7	235·9
Onions, Spanish—										
Skin	2·0	1·0	0·1	0·3	0·01	0·6	0·02			
Inside edible part	98·0	92·3	0·4	0·7	0·59	4·0	0·04	19·2	5·4	87·1
Whole	100·0	93·3	0·5	1·0	0·6	4·6	0·06	21·9	6·2	99·3

(*D*).—*Flowers and Fruits.*

Artichoke, Green—										
" Fond "	13·4	11·5	0·2	0·2	0·5	1·0	0·01	6·2	1·8	28·1
Edible part leaf	18·6	14·6	0·2	0·8	0·4	2·6	0·00	12·3	3·5	55·8
Waste leaf	68·0	56·2	0·9	4·2	1·6	5·0	0·00	—	—	—
Whole	100·0	82·3	1·3	5·2	2·5	8·6	0·01	45·6	12·9	206·8

FRESH VEGETABLES.

Calculation of Analytical Data showing Figures for Edible Part, Whole Vegetable and Allowance for Waste—*continued.*

(*D*).—*Flowers and Fruits*—continued.

—	Per-centage Amount	Water.	Ash.	Fibre.	Protein.	Carbo-hydrate.	Fat.	Energy Value. Calories per—		
								100 gm.	1 oz.	1 lb.
Cauliflower—										
Flower and edible leaf	52·2	47·1	0·5	0·5	1·0	3·1	0·1	17·7	5·0	80·3
Waste leaf and stalk	47·8	42·7	0·5	0·8	0·5	3·2	0·05	—	—	—
Whole	100·0	89·8	1·0	1·3	1·5	6·3	0·15	33·4	9·5	151·5
Cucumber—										
Edible part	82·6	79·9	0·3	0·2	0·5	1·6	0·07	9·3	2·6	42·2
Skin	17·4	16·5	0·2	0·1	0·1	0·4	0·03	—	—	—
Whole	100·0	96·4	0·5	0·3	0·6	2·0	0·1	11·6	3·3	52·6
Marrow, Green—										
Edible part	67·4	62·7	0·3	0·4	0·3	3·5	0·03	15·9	4·5	72·1
Seed part	17·4	16·0	0·1	0·1	0·2	0·9	0·02	—	—	—
Skin	15·2	13·5	0·1	0·4	0·2	0·9	0·03	—	—	—
Whole	100·0	92·2	0·5	0·9	0·7	5·3	0·08	25·3	7·2	114·8

Marrow, Yellow —										
Edible part	55·4	53·6	0·2	0·2	0·1	1·2	0·03	5·6	1·6	25·4
Seed part	25·0	23·2	0·2	0·2	0·3	1·1	0·04			
Skin	19·6	18·7	0·1	0·2	0·1	0·6	0·03			
Whole	100·0	95·5	0·5	0·6	0·5	2·9	0·10	14·9	4·2	67·6

(E).—Stems.

Asparagus—										
Edible part	42·8	38·9	0·4	0·4	1·3	1·8	0·02	12·9	3·6	58·5
Stalk	57·2	51·8	0·5	1·1	1·0	2·7	0·05			
Whole	100·0	90·7	0·9	1·5	2·3	4·5	0·07	28·5	8·1	129·3
Celery—										
Stalk, edible part	88·5	82·9	0·9	0·7	0·5	3·4	0·09	16·8	4·8	76·2
Leaf	11·5	10·3	0·2	0·1	0·2	0·7	0·01			
Whole	100·0	93·2	1·1	0·8	0·7	4·1	0·10	20·6	5·8	93·4
Rhubarb—										
Edible part stalk	82·1	77·5	0·6	0·5	0·5	3·0	0·06	14·9	4·2	67·6
Leaf	17·9	16·4	0·2	0·1	0·3	0·9	0·01			
Whole	100·0	93·7	0·8	0·6	0·8	3·9	0·07	19·9	5·6	90·3

FRESH VEGETABLES.

CALCULATION OF ANALYTICAL DATA SHOWING FIGURES FOR EDIBLE PART, WHOLE VEGETABLE AND ALLOWANCE FOR WASTE—*continued.*

(*E*).—*Stems*—continued.

—	Per-centage Amount	Water.	Ash.	Fibre.	Protein.	Carbo-hydrate.	Fat.	Energy Value. Calories per— 100 gm.	1 oz.	1 lb.
Seakale—										
Edible part	77·1	72·0	0·4	0·6	1·2	2·9	0·02	17·0	4·8	77·1
Root, &c.	22·9	20·3	0·2	0·3	0·5	1·5	0·02			
Whole	100·0	92·3	0·6	0·9	1·7	4·4	0·04	25·4	7·2	115·2
Mushroom—										
Flesh	79·4	72·5	0·9	0·7	3·6	1·6	0·16	22·8	6·5	103·9
Stalk	12·0	10·9	0·1	0·1	0·5	0·3	0·01	3·4	1·0	15·4
Skin	8·6	7·3	0·1	0·1	0·6	0·4	0·02			
Whole	100·0	90·7	1·1	0·9	4·7	2·3	0·19	30·6	8·7	138·8

(*F*).—*Leaves* (*as Salads*).

—	Per-centage Amount	Water.	Ash.	Fibre.	Protein.	Carbo-hydrate.	Fat.	Energy Value. Calories per— 100 gm.	1 oz.	1 lb.
Batavia—										
Edible inside leaves	54·0	50·3	0·5	0·6	0·8	1·8	0·05	11·1	3·1	50·3
Outside leaves and stalk ...	42·3	39·3	0·7	0·3	0·3	1·6	0·04			
Root	3·7	—	—	—	—	—	—			
Whole	100·0	89·6	1·2	0·9	1·1	3·4	0·09	19·3	5·5	87·5

Corn Salad—										
Edible leaf	96·1	88·6	1·6	1·1	1·7	2·9	0·2			
Root	3·9	—	—	—	—	—	—			
Whole	100·0	88·6	1·6	1·1	1·7	2·9	0·2	20·7	5·9	93·9
Endive—										
Edible inside leaves	73·6	68·7	0·8	0·6	1·3	2·1	0·07	14·6	4·1	66·2
Outside leaves and stalk ...	26·4	24·3	0·6	0·4	0·4	0·7	0·03			
Whole	100·0	93·0	1·4	1·0	1·7	2·8	0·10	19·4	5·5	88·0
Lettuce—										
Edible inside leaves	63·5	60·6	0·5	0·4	0·7	1·2	0·13	9·0	2·6	40·8
Outside leaves and stalk ...	36·5	34·6	0·5	0·3	0·3	0·8	0·07			
Whole	100·0	95·2	1·0	0·7	1·0	2·0	0·20	14·2	4·0	64·4
Parsley—										
Leaf	72·2	56·9	2·1	1·6	2·7	8·4	0·51	50·3	14·3	228·2
Stalk	27·8	22·4	0·8	0·8	0·4	3·3	0·08			
Whole	100·0	79·3	2·9	2·4	3·1	11·7	0·59	66·2	18·8	300·3
Watercress—										
Leaf	50·0	46·3	0·5	0·3	0·7	2·1	0·2	13·3	3·8	60·3
Stalk	50·0	47·7	0·4	0·3	0·6	0·9	0·1			
Whole	100·0	94·0	0·9	0·6	1·3	3·0	0·3	20·4	5·8	92·5

FRESH VEGETABLES.

CALCULATION OF ANALYTICAL DATA SHOWING FIGURES FOR EDIBLE PART, WHOLE VEGETABLE AND ALLOWANCE FOR WASTE—*continued.*

(*G*).—*Leaves.*

—	Percentage Amount	Water.	Ash.	Fibre.	Protein.	Carbohydrate.	Fat.	Energy Value. Calories per—		
								10 gm.	1 oz.	1 lb.
Brussels Sprouts—										
Edible inside leaves	76·8	67·8	0·8	0·8	2·8	4·4	0·15	30·9	8·8	140·2
Outside leaves	23·2	20·1	0·4	0·4	0·8	1·4	0·05			
Whole	100·0	87·9	1·2	1·2	3·6	5·8	0·20	40·4	11·5	183·2
Cabbage—										
Edible inside leaves	48·4	42·8	0·4	0·5	0·7	3·9	0·05	19·3	5·5	87·5
Outside leaves and stalk ...	51·6	44·6	0·7	0·8	0·6	4·8	0·10			
Whole	100·0	87·4	1·1	1·3	1·3	8·7	0·15	42·4	12·0	192·3
Cabbage, Red—										
Edible inside leaves	57·4	51·3	0·6	0·5	1·3	3·7	0·06	21·1	6·0	95·7
Outside leaves	42·6	36·3	0·8	0·8	1·2	3·4	0·09			
Whole	100·0	87·6	1·4	1·3	2·5	7·1	0·15	40·8	11·6	185·1

Savoy Cabbage—										
Edible inside leaves	56·9	51·3	0·6	0·6	1·5	2·9	0·06	18·6	5·3	84·4
Outside leaves	43·1	38·1	0·7	0·9	0·8	2·6	0·09			
Whole	100·0	89·4	1·3	1·5	2·3	5·5	0·15	33·4	9·5	151·5
Curly Kale—										
Edible leaf	69·1	57·6	1·5	1·0	2·7	6·1	0·30	38·9	11·0	176·4
Stalk	17·3	} not analysed.								
Root	13·6									
Whole	100·0									
Spinach, Perpetual—										
Leaf	70·5	65·8	1·1	0·5	1·2	1·8	0·07	12·9	3·7	58·5
Stalk	29·5	27·3	0·6	0·2	0·3	1·1	0·03			
Whole	100·0	93·1	1·7	0·7	1·5	2·9	0·10	19·0	5·4	86·2
Sprouting Broccoli—										
Leaf	87·0	68·7	2·2	1·6	4·1	10·0	0·35	61·1	17·3	277·1
Stalk	13·0	not analysed.								
Whole	100·0									
Thousand Heads—										
Edible part leaf	56·5	45·8	1·1	1·0	2·5	5·9	0·22	36·5	10·3	165·6
Stem	36·4	30·8	0·5	0·7	1·0	3·4	0·04			
Large stalk	7·1	—	—	—	—	—	—			
Whole	100·0	76·6	1·6	1·7	3·5	9·3	0·26	54·9	15·6	249·0

DRIED LEGUMES OR PULSES.

An almost complete set of dried beans, lentils and peas, as well as the flour prepared from them was obtainable on the market during the summer of 1919.

A sample of Soya beans was also analysed.

There is a considerable variation in the chemical analyses of the varieties of dried beans, especially in the protein content, but the calorie value is about the same.

In the case of peas, the split variety is of higher calorie value than the whole pea. Further, the flour has a still higher calorie value.

Soya beans have a very high fat and protein content, and, in consequence of the large amount of fat, have a distinctly higher calorie value.

CEREALS AND CEREAL PRODUCTS.

With the exception of pearl barley, buckwheat flour, Force and a few other special cereal products, an almost complete set of cereals (whole grain and milled grain) were obtainable on the market during the summer of 1919.

Messrs. Hovis, Ltd., have kindly supplied various wheat samples. They form an interesting series. Middlings and semolina closely resemble wheat flour. Further analyses of wheat flour are given later.

The two analyses of rye flour are rather different. Sample (1) was a fresh sample.

FLOUR.

In addition to the analyses of flour under cereals and cereal products, several other analyses have been carried out.

The analytical data do not differ to any great extent, though the samples had a slightly different outward appearance.

The differences make little alteration to the energy value. Flour containing germ will be of more value in health preservation than pure wheaten flour. The germ-containing flour has the anti-neuritic vitamine. Rye flour as usually milled contains the germ.

DRIED LEGUMES, PULSES.

ANALYTICAL DATA.

—	Water.	Ash.	Fibre.	Protein.	Carbo-hydrate by Diff.	Fat.	Energy Value. Calories per—		
							100 gm.	1 oz.	1 lb.
Peas—									
Whole, green	13·8	2·7	5·4	20·4	57·1	0·6	323·3	91·7	1,466·5
Split, ,,	11·1	2·7	0·9	22·1	62·4	0·8	353·9	100·3	1,605·3
,, yellow	12·6	2·4	1·0	20·3	63·0	0·7	348·0	98·7	1,578·5
Pea flour	8·7	2·7	1·1	21·9	64·2	1·4	366·0	103·8	1,660·2
Maple peas, whole	13·8	3·2	4·9	18·9	58·5	0·7	323·8	91·8	1,468·8
Lentil—									
Flour	9·9	3·1	1·2	21·4	63·5	0·9	356·5	101·1	1,617·1
Whole, brown	12·2	2·3	3·1	22·2	59·7	0·5	340·4	96·5	1,544·0
Split, red	12·3	2·1	1·2	20·1	63·9	0·4	348·1	98·7	1,579·0
,, "Russian"	10·7	2·1	2·2	21·4	63·0	0·6	351·6	99·7	1,594·9
Beans—									
Butter	11·2	4·0	3·3	18·6	62·2	0·7	337·8	95·8	1,532·3
Haricot, small	11·1	3·5	2·6	17·8	64·5	0·5	342·1	97·0	1,551·8
,, large	12·2	4·4	3·7	16·7	61·3	1·7	335·6	95·1	1,522·3
Brown and white	12·0	3·5	2·3	19·2	61·7	1·3	343·8	97·5	1,559·5
Light brown	11·2	3·4	2·0	19·2	63·2	1·0	347·1	98·4	1,574·4
Small dark brown	11·6	3·6	2·4	18·9	62·5	1·0	343·0	97·2	1,555·8
Scarlet runner	13·3	3·7	2·9	15·2	62·8	2·1	339·3	96·2	1,539·1
Red (French dwarf)	12·3	3·7	2·3	20·6	60·0	1·1	340·7	96·6	1,545·4
Black	12·1	3·5	2·6	16·4	64·0	1·4	342·7	97·1	1,554·5
Broad	13·3	3·5	3·5	23·9	54·5	1·3	333·5	94·5	1,512·8
Soya	7·2	4·5	3·8	33·7	32·5*	18·3	441·6	125·2	2,003·1

* Sucrose = 7·9 of this quantity.

CEREALS.

Analytical Data.

—	Water.	Ash.	Fibre.	Protein.	Fat.	Carbo-hydrate by Diff.	Energy Value. Calories per—		
							100 gm,	1 oz.	1 lb.
Barley—									
Grain	13·7	2·4	3·4	10·4	1·2	68·9	336·3	95·3	1,525·5
Meal...	9·1	4·0	5·8	10·6	4·2	66·3	354·4	100·5	1,607·6
Flour	11·0	3·2	1·5	10·7	4·1	69·5	367·0	104·0	1,664·7
Pot	10·5	1·1	0·7	7·0	0·8	79·9	363·7	103·1	1,649·7
" Kernel "	10·5	1·4	0·9	8·0	1·8	77·8	364·8	103·4	1,654·7
Buckwheat grain	12·6	2·2	8·9	12·1	1·9	62·3	322·7	91·5	1,463·8
Maize—									
Grain	10·6	1·4	1·4	9·9	4·2	72·5	376·9	106·8	1,709·6
Meal...	9·6	0·7	0·3	9·9	2·1	77·4	377·5	107·0	1,712·3
Hominy	11·2	0·4	0·4	7·0	0·5	80·5	363·4	103·0	1,648·4
Cornflour	11·4	0·1	0·0	0·8	0·1	87·6	363·4	103·0	1,648·4
Millet grain, Japanese	10·5	3·9	2·6	11·2	2·9	68·9	355·4	100·8	1,612·1
Oat—									
Grain	12·3	2·6	8·7	8·2	5·6	62·6	342·4	97·1	1,553·1
Groats	7·7	2·0	1·6	12·0	8·4	68·3	407·4	115·5	1,848·0
Coarse meal	7·0	1·8	0·8	12·3	8·2	69·9	413·3	117·2	1,874·7
Medium meal	6·9	1·8	0·8	11·9	8·6	70·0	415·8	117·9	1,886·1
Fine meal	8·2	1·8	0·7	11·7	8·3	69·3	409·3	116·0	1,856·6
Mean of groats and meals...	7·5	1·9	1·0	12·0	8·4	69·4	411·4	116·7	1,866·3

Oats—									
Rolled (1)	9·2	1·8	0·8	12·9	6·3	69·0	394·4	111·8	1,789·0
,, (2)	7·8	1·7	0·6	13·3	6·7	69·9	403·4	114·4	1,829·8
Mean of rolled	8·5	1·8	0·7	13·1	6·5	69·5	398·9	113·1	1,809·4
Rice—									
Unpolished...	11·8	0·6	0·2	6·8	0·6	80·0	361·5	102·5	1,639·8
Polished, Indian	12·2	0·8	0·4	5·9	0·4	80·3	357·1	101·2	1,619·8
Ground	11·1	0·4	0·2	6·4	0·3	81·6	363·6	103·1	1,649·3
Flaked	11·3	0·5	0·1	6·1	0·3	81·7	362·8	102·8	1,645·7
Mixed sample	10·9	0·6	0·3	6·7	0·4	81·1	363·7	103·1	1,649·7
Honduras	11·3	0·7	0·4	7·2	0·4	80·0	361·2	102·4	1,638·4
Mean	11·4	0·6	0·3	6·5	0·4	80·8	361·7	102·5	1,640·4
Rye—									
Grain	11·6	1·6	1·7	6·6	1·2	77·3	355·2	100·7	1,611·2
Flour (1)	10·4	0·6	0·4	6·1	0·8	81·7	367·4	104·2	1,666·5
,, (2)	9·3	0·9	0·3	7·5	1·4	80·6	374·2	106·1	1,697·4
Wheat—									
Grain	13·8	1·7	2·0	10·9	1·2	70·4	344·5	97·7	1,562·6
Flour (1)	10·8	0·5	0·2	11·1	1·3	76·1	371·6	105·3	1,685·6
,, (2)	11·1	0·6	0·2	12·7	1·4	74·0	368·5	104·5	1,671·5
,, (3)	11·2	2·2	0·9	14·0	2·3	69·4	363·3	103·0	1,647·9
Bran (1)	10·7	6·3	9·0	13·7	2·4	57·9	315·9	89·8	1,432·9
,, (2)	9·4	5·6	9·2	14·1	3·9	57·8	331·1	94·4	1,510·9
Offal	9·8	4·6	7·1	15·3	5·0	58·2	347·9	98·6	1,578·1
Middlings	11·7	0·6	0·3	12·4	1·1	73·9	364·1	103·2	1,651·6
Germ	9·9	4·3	2·9	24·3	7·5	51·1	378·9	107·4	1,718·7
Semolina	11·4	0·5	0·3	11·4	1·1	75·3	365·7	103·7	1,658·8
Meal...	11·6	1·5	1·3	11·7	2·0	71·9	361·4	102·5	1,639·3
Shredded	8·8	1·4	1·2	9·8	1·1	77·7	369·0	104·6	1,673·8

CEREAL PRODUCTS.

ANALYTICAL DATA.

—	Water.	Ash.	Fibre.	Protein.	Fat.	Carbo-hydrate by Diff.	Energy Value. Calories per—		
							100 gm.	1 oz.	1 lb.
Grape Nuts	6·3	2·3	1·3	9·5	0·5	80·1*	372·0	105·5	1,687·4
Macaroni—									
Fancy shape	10·8	0·4	0·2	12·1	0·1	76·4	363·8	103·1	1,650·2
Stick	10·9	0·5	0·1	12·8	0·2	75·5	363·9	103·2	1,650·6
Spaghetti	10·8	0·5	0·1	10·9	0·3	77·4	364·8	103·4	1,654·7
Vermicelli	10·4	0·5	0·1	11·5	0·1	77·4	365·4	103·6	1,657·4
Pates d'Italie	10·5	0·4	0·1	11·3	0·4	77·3	367·0	104·0	1,664·7
Mean of above 5	10·7	0·5	0·1	11·7	0·2	76·8	365·0	103·5	1,656·2
Fresh Italian	26·0	0·5	0·2	9·0	0·1	64·2	301·0	85·3	1,365·3
Arrowroot	13·2	0·1	0·03	0·2	0·03	86·44	355·5	100·8	1,612·6
Potato flour	12·9	0·2	0·03	0·3	0·04	86·53	356·4	101·0	1,616·6
Sago	11·9	0·1	0·07	0·2	0·02	87·71	360·6	102·2	1,635·7
Tapioca	11·9	0·1	0·01	0·2	0·05	87·74	361·0	102·3	1,637·5
,, bullet	10·6	0·1	0·03	0·2	0·08	88·99	366·4	103·9	1,662·0
,, seed	10·1	0·1	0·01	0·2	0·02	89·57	368·2	104·4	1,670·0
Mean of six	11·8	0·1	0·03	0·2	0·04	87·83	361·4	102·4	1,639·1

* 20·6 per cent. of this quantity is reducing sugar calculated as maltose.

FLOUR.

ANALYTICAL DATA.

Source.	Water.	Ash.	Fibre.	Protein.	Carbo-hydrate by Diff.	Fat.	Energy Value. Calories per—		
							100 gm.	1 oz.	1 lb.
Colchester, 24.6.16	12·6	0·5	—	12·1	73·7	1·1	362·0	102·6	1,642
Woolwich, 9.6.17	12·1	1·5	1·0	11·4	71·8	2·2	361·6	102·5	1,640
Devonport, 21.6.17...	11·5	0·8	0·5	10·3	75·2	1·7	366·4	104·0	1,662
Deptford (1) 5.7.17	10·8	0·6	0·1	11·5	75·5	1·5	370·6	105·0	1,681
(2) 5.7.17	11·3	0·8	0·4	9·3	76·8	1·4	366·0	103·7	1,660
(3) 5.7.17	11·2	0·8	0·5	9·5	76·5	1·5	366·6	103·9	1,663
(4) 5.7.17	11·0	0·8	0·4	9·3	77·0	1·5	367·8	104·2	1,667
"Baxendall," 10.8.17	11·6	0·9	0·7	9·5	75·6	1·7	364·7	104·4	1,654
10.8.17	10·7	0·8	1·6	9·5	75·8	1·6	364·6	104·4	1,654
10.8.17	10·9	0·9	1·7	9·1	75·8	1·6	363·0	103·0	1,647
10.8.17	10·5	0·8	0·5	9·4	76·8	2·0	372·0	105·4	1,687
Mean	11·3	0·8	0·7	10·1	75·5	1·6	365·9	103·9	1,660
1918	12·1	1·0	0·8	10·1	74·1	1·9	362·9	102·9	1,646
1914	11·3	0·5	0·1	9·6	77·7	0·8	365·4	103·6	1,657

BREAD.

Most of the samples of bread procured for analysis were made from "war" flour and baked during March, April, May, 1918. They were obtained from various sources and consisted of samples of:

White bread (V.V. bread differs in appearance in containing large pieces of husk).
  ,, with a percentage of rye flour.
  ,, ,, ,, potato flour.
Brown bread.

The analysis of a sample of white bread purchased in August, 1917, is of interest for comparison. Also a sample baked with a remainder of 1914 flour.

Some analyses of bread baked during 1911–1914 have been kindly supplied by Mr. C. H. Cribb, B.Sc., F.I.C., and Major Stanley Elliott, O.B.E., B.Sc., F.I.C. They do not materially differ from these analyses. Two samples of bread baked in Aberdeen in 1920 show similar analytical data to the other samples, except in the amount of fat. The high fat content is no doubt due to the practice of adding milk to the dough. No marked difference is noticeable in the various breads. The food value depends ultimately on the moisture content of the bread. The close correspondence is better shown in the calculations of the data "moisture free."

War bread differed from pre-war bread mainly in appearance and was not so fresh at the time of purchase. It had to be sold twenty-four hours after baking. Though not quite fresh at the time of purchase, it remained fresh and palatable for over twenty-four hours. Pre-war bread was generally stale in twenty-four hours.

Brown bread, on the average (excluding the Scotch samples), contained about 2 per cent. more moisture than white bread. The Scotch samples were quite fresh, and contained less water than the other samples, except one Army bread sample, which was stale.

Preference should be given to brown bread or other breads containing the germ of the wheat. The anti-neuritic factor is present in the germ; this is also supplied by the yeast used in baking. From the health standard white highly-milled flour baked with baking powder is to be deprecated.

BISCUITS.

Only samples of both kinds of Army biscuit were analysed.

BREAD.

ANALYTICAL DATA.

—	Acidity c.c. N/10 per 100 gm.	Water.	Other Ash.	Sodium Chloride.	Fibre.	Protein.	Carbohydrate.		Fat.	Energy Value. Calories per—		
							Maltose.	Starch by Diff.		100 gm.	1 oz.	1 lb.
(*A*) *White.*												
Sample, 4.3.18 ...	19·2	42·8	0·9	0·9	—	6·6	3·5	45·2	0·1	227·6	64·5	1,032·4
5.3.18 ...	16·2	42·8	0·8	0·9	—	7·1	4·3	44·0	0·1	228·0	64·6	1,034·2
2.4.18 ...	34·1	45·1	1·2	0·9	0·5	7·2	2·7	42·3	0·1	214·9	60·9	974·8
4.4.18 ...	25·9	45·3	1·0	0·8	0·5	7·0	3·8	41·5	0·1	215·4	61·1	977·0
14.3.18 ...	23·8	41·0	0·9	0·8	0·7	7·3	5·0	44·2	0·1	232·5	65·9	1,054·6
18.3.18 ...	31·5	42·8	0·9	0·9	0·5	7·3	4·2	43·2	0·2	226·0	64·1	1,025·1
Army, 31.1.18 ...	—	36·3	0·9	1·2	0·3	7·0	3·9	50·2	0·2	252·4	71·6	1,144·9
16.3.18 ...	27·6	42·8	1·0	0·9	0·6	7·3	4·2	43·0	0·2	225·2	63·9	1,021·5
Sample, 14.3.18 ...	45·8	43·4	1·2	0·8	1·0	8·6	3·1	41·6	0·3	221·3	62·7	1,003·8
–.8.17 ...	—	41·9	0·8	0·9	0·2	6·7	3·5	45·8	0·2	231·5	65·6	1,050·1
Sample from 1914 flour—1918 ...	6·5	45·1	0·6	0·7	0·1	6·3	2·9	44·2	0·1	219·9	62·3	997·5
Scotch sample, 1920	—	37·9	0·9	—	0·3	7·9	—	47·9	0·9	237·1	67·2	1,075·5
Mean	—	42·3	0·9	0·9	0·5	7·2	3·7	44·4	0·2	228·6	64·8	1,036·9
(*B*) *With Percentage of Rye Flour.*												
(1) 25 per cent., 10.4.18	27·8	45·3	1·0	0·7	0·5	6·5	2·5	43·4	0·1	215·8	61·2	978·9
(2) ditto	25·5	43·1	0·9	1·2	0·5	6·5	4·1	43·6	0·1	223·1	63·2	1,012·0
Mean	—	44·2	0·9	0·9	0·5	6·5	3·3	43·5	0·1	219·4	62·2	995·5

BREAD.

Analytical Data—*continued.*

—	Acidity c.c. N/10 per 100 gm.	Water.	Other Ash.	Sodium Chloride.	Fibre.	Protein.	Carbohydrate.		Fat.	Energy Value. Calories per—		
							Maltose.	Starch by Diff.		100 gm.	1 oz.	1 lb.
(*C*) *With Percentage of Potato Flour.*												
(1) 11.6.18	83·8	43·6	1·0	0·9	0·4	7·0	3·0	44·0	0·1	222·3	63·0	1,008·3
(2) 13 per cent., 19.6.18	31·0	43·1	1·0	1·0	0·5	7·2	3·2	43·9	0·1	223·6	63·4	1,014·2
Mean	—	43·3	1·0	0·9	0·5	7·1	3·1	44·0	0·1	222·9	63·2	1,011·2
(*D*) ***Brown.***												
Sample, 9.3.18 ...	28·7	44·0	0·8	1·0	0·8	7·5	3·5	42·3	0·1	219·5	62·2	995·6
4.4.18 ...	26·5	48·3	1·3	1·4	0·8	6·4	3·6	38·1	0·1	198·1	56·3	898·6
9.3.18 ...	74·6	47·0	0·9	0·9	0·6	7·1	4·6	38·7	0·2	208·5	59·1	945·8
Scotch sample, 1920	—	35·8	2·1	—	0·5	7·3	—	53·1	1·2	258·8	73·3	1,173·9
Sample, 9.3.18 ...	56·4	40·9	1·3	0·9	0·8	6·9	11·6	37·2	0·4	231·1	65·5	1,048·3
Mean	—	43·2	1·3	1·0	0·7	7·0	5·8	41·9	0·4	223·2	63·3	1,012·4
Mean of all ...	—	43·2	1·0	0·9	0·5	7·0	4·0	43·4	0·2	223·5	63·4	1,014·0

BREAD.

ANALYSES OF WHITE BREAD (1911–1914).

By C. H. Cribb, B.Sc., F.I.C., and Stanley Elliott, B.Sc., F.I.C.

—	Acidity c.c. N/10 per 100 gm.	Water.	Ash.	Protein.	Carbo-hydrate by Diff.	Fat.
	34·4	43·4	1·1	7·2	47·7	0·6
	41·1	42·9	1·2	6·5	48·5	0·9
	34·4	41·6	1·0	7·3	49·7	0·4
	26·6	43·4	1·0	7·3	47·6	0·7
	48·9	44·3	1·5	6·8	46·8	0·6
	32·2	44·5	0·9	6·8	47·2	0·5
	24·4	40·5	0·8	6·8	50·7	1·2
Mean	34·6	42·9	1·1	7·0	48·3	0·7

ANALYSES CALCULATED MOISTURE FREE.

—	Ash and Sodium Chloride.	Fibre.	Protein.	Carbo-hydrate.	Fat.
Sample, 4.3.18	3·2	—	11·5	85·1	0·2
5.3.18	3·0	—	12·4	84·4	0·2
2.4.18	3·8	1·00	13·1	82·0	0·2
4.4.18	3·3	0·9	12·8	82·8	0·2
14.3.18	2·9	1·2	12·4	83·4	0·2
18.3.18	3·2	0·9	12·8	82·9	0·4
Army, 31.1.18	3·3	0·5	11·0	84·9	0·3
16.3.18	3·3	1·1	12·8	82·5	0·4
Sample, 14.3.18	3·5	1·8	15·2	79·0	0·5
–.8.17	2·9	0·3	11·5	84·9	0·3
1914 flour, 1918	2·4	0·3	11·5	86·0	0·1
Scotch sample, 1920 ...	1·4	0·5	12·7	77·1	1·4
With rye ...	3·7	0·9	11·4	83·8	0·2
25 per cent....	3·1	0·9	11·9	83·9	0·2
With potato ...	3·4	0·7	12·4	83·3	0·2
13 per cent....	3·5	0·9	12·7	82·8	0·2
Mean	3·1	0·7	12·4	83·1	0·3
Sample, 9.3.18	3·2	1·4	13·4	81·8	0·2
4.4.18	5·2	1·5	12·4	80·7	0·2
9.3.18	3·4	1·13	13·4	81·7	0·4
Scotch sample	3·3	0·8	11·4	82·7	1·9
Sample, 9.3.18	3·7	1·3	11·7	82·6	0·7
Mean	3·8	1·2	12·5	81·9	0·7

BREAD,

ANALYTICAL DATA OF CRIBB AND ELLIOTT. CALCULATED MOISTURE FREE.

—	Ash and Sodium Chloride.	Protein.	Carbohydrate and Fibre.	Fat.
	1·9	12·7	84·3	1·1
	2·1	11·4	84·9	1·6
	1·7	12·5	85·1	0·7
	1·8	12·9	84·1	1·2
	2·7	12·2	84·0	1·1
	1·6	12·2	85·0	0·9
	1·3	11·4	85·2	2·0
Mean ...	1·9	12·2	84·7	1·2

BISCUITS.

ANALYTICAL DATA.

—	Water.	Ash.	Sodium Chloride.	Fibre.	Protein.	Carbohydrate.		Fat.	Energy Value. Calories per—		
						Cane Sugar.	Starch by Diff.		100 gm.	1 oz.	1 lb.
Button	7·2	1·5	0·3	1·5	13·1	5·8	69·4	1·2	373·2	105·8	1,692·8
Square	8·3	1·4	0·8	1·0	11·9	5·9	70·4	0·3	364·4	103·3	1,652·9
Mean	7·7	1·5	0·6	1·2	12·5	5·9	69·9	0·7	368·8	104·6	1,672·8

FRESH FRUITS.

With the exception of apricots, which were not obtainable on the market during 1919, an almost complete set of the common fresh fruits has been purchased for analysis. Other fruits not obtainable, during the course of the period taken for this purpose, were pomegranate, medlars and quinces. These are of minor importance, as they are not frequently eaten. Rhubarb is included under fresh vegetables. In the case of fresh fruits there is another small factor to be considered, namely, the very great variety of most kinds of fruit; this is most noticeable with apples, pears and plums. Several varieties of each have been procured. In some instances there is resemblance in calorie value, in other instances there is difference. This may depend mainly upon the state of ripeness of the fruit. The better quality fruit usually has a higher calorie value, partially on account of the fuller ripeness (hence more sugar) and partially on account of the smaller amount of waste.

Sugar is the chief calorie-giving constituent of fruit. Its amount has been determined directly in each case, and it is of interest to notice whether the sugar be "glucose,"* or a mixture of "glucose" and sucrose. Generally speaking, glucose is the chief sugar of fruits; sucrose is not present in all fruits.

The acidity of the fruits has also been determined, but no food or calorie value has been calculated from this figure. Usually the acid of fruit is returned as malic acid. It is not proven that malic acid is the only acid present in fruits. Grapes undoubtedly contain tartaric acid, oranges and lemons contain citric acid. Other acids have also been isolated from fruits. The absence of this calculated figure may partially account for the "undetermined matter" which is present in the majority of the analyses. The "undetermined matter" may also be more water, as it is very difficult to remove all water from syrupy matter such as results on drying fruits. Pectin is another constituent of fruits which is included under "undetermined matter." Our knowledge of this substance is very limited, both as to its estimation and amount in fruits, and also as to its calorie value.

The data for calorie value are thus minimal figures, but they would not be largely increased if the undetermined matter were regarded as sugar.

Bananas are an exception in containing starch. The undetermined matter is here regarded as starch.

The various fruits, in so far as was necessary, were separated into their edible and inedible parts. The proportions of these parts were determined. Only the usual edible matter was analysed. Allowance can be made for the waste from the proportion of the inedible matter.

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* *i.e.*, Sugar directly reducing Fehling's solution. Fructose is included in the term as now used.

FRESH FRUITS.

PROPORTION OF EDIBLE AND WASTE.

Apples.

	Gm.	Percentage.
Charles Ross (1)—		
Edible ...	212	93·4
Waste... ...	15	6·6
Total ...	227	100·0
Codling (cooking) (3)—		
Edible ...	516	93·3
Waste... ...	37	6·7
Total ...	553	100·0
Cox's Orange Pippin (1)—		
Edible ...	134	93·7
Waste... ...	9	6·3
Total ...	143	100·0
Golden Nob (11)—		
Edible ...	432	89·4
Waste... ...	51	10·6
Total ...	483	100·0
Pearmain (7)—		
Edible ...	417	89·7
Waste... ...	48	10·3
Total ...	465	100·0
Quarenden (7)—		
Edible ...	379	85·4
Waste... ...	65	14·6
Total ...	444	100·0

Bananas.

	Gm.	Percentage.
Canary (5)—		
Edible ...	266	56·2
Waste... ...	207	43·8
Total ...	473	100·0
Jamaica (5)—		
Edible ...	351	57·2
Waste... ...	263	42·8
Total ...	614	100·0

Blackberries.

	Gm.	Percentage.
Cultivated, Edible	—	100
Wild, Edible ...	—	100

Cherries.

	Gm.	Percentage.
Black—		
Edible	384	87·3
Waste	56	12·7
Total ...	440	100·0
White—		
Edible	356	87·7
Waste	50	12·3
Total ...	406	100·0
Cooking—		
Edible	376	87·4
Waste	54	12·6
Total ...	430	100·0

Currants.

	Gm.	Percentage.
Black—		
Edible	429	94·5
Waste	25	5·5
Total ...	454	100·0
Red—		
Edible	435	95·6
Waste	20	4·4
Total ...	455	100·0
White—		
Edible	449	96·4
Waste	17	3·6
Total ...	466	100·0

Damsons.

	Gm.	Percentage.
Edible	222	91·7
Waste	20	8·3
Total ...	242	100·0

Figures in brackets indicate number of apples. The larger the apple, the smaller the amount of waste. The skin is included as edible matter. Any bruised portion is included under waste.

FRESH FRUITS.

PROPORTION OF EDIBLE AND WASTE—*continued.*

Figs.

	Gm.	Percentage.
English (5)—		
Edible	201	80·4
Waste	49	19·6
Total ...	250	100·0

Gooseberries.

	Gm.	Percentage.
Cooking—		
Edible	452	99·8
Waste	1	0·2
Total ...	453	100·0
Eating—		
Edible	457·5	99·7
Waste	1·1	0·3
Total ...	458·6	100·0

Grape Fruit (1).

	Gm.	Percentage.
Edible	266	70·0
Waste	114	30·0
Total ...	380	100·0

Grapes.

	Gm.	Percentage.
Alicante—		
Edible	344	94·0
Waste	22	6·0
Total ...	366	100·0
Colmar—		
Edible	254	95·1
Waste	13	4·9
Total ...	267	100·0
Hambro—		
Edible	375	94·5
Waste	22	5·5
Total ...	397	100·0
Muscat (1st quality)—		
Edible	131	97·0
Waste	4	3·0
Total ...	135	100·0

Grapes.

	Gm.	Percentage.
Muscat (ordinary)—		
Edible	202	95·3
Waste	10	4·7
Total ...	212	100·0
Spanish white—		
Edible	351	93·3
Waste	25	6·7
Total ...	376	100·0

Greengages.

	Gm.	Percentage.
Edible	467	94·5
Waste	27	5·5
Total ...	494	100·0

Lemons.

	Gm.	Percentage.
Edible	186	67·9
Waste	88	32·1
Total ...	274	100·0

Melons.

	Gm.	Percentage.
English—		
Edible	438	57·9
Waste	318	42·1
Total ...	756	100·0
Canteloupe—		
Edible	587	45·2
Waste	713	54·8
Total ...	1,300	100·0
Spanish—		
Edible	1,452	62·8
Waste	862	37·2
Total ...	2,314	100·0

Mulberries.

	Gm.	Percentage.
Edible	—	100

FRESH FRUITS.

Proportion of Edible and Waste—*continued.*

Nectarine (1).

	Gm.	Per-centage.
Edible	126	94·7
Waste	7	5·3
Total	133	100·0

Oranges.

	Gm.	Per-centage.
Californian (1)—		
Edible	149	76·0
Waste...	47	24·0
Total	196	100·0
S. African (2)—		
Edible	235	70·6
Waste...	98	29·4
Total	333	100·0
Tangier (6)—		
Edible	234	78·0
Waste...	66	22·0
Total	300	100·0

Peaches (2).

	Gm.	Per-centage.
Edible	187	93·0
Waste	14	17·0
Total	201	100·0

Pineapple.

	Gm.	Per-centage.
Edible	632	67·3
Waste	307	32·7
Total	939	100·0

Pears.

	Gm.	Per-centage.
Cooking (8) (small William)—		
Edible	461	88·6
Waste...	59	11·4
Total	520	100·0
Eating (5) (William)—		
Edible	470	87·4
Waste...	68	12·6
Total	538	100·0

Pears.

	Gm.	Per-centage.
Eating (10) (Hazel)—		
Edible	418	87·2
Waste...	61	12·8
Total	479	100·0
Cooking (12)—		
Edible	431	87·4
Waste...	62	12·6
Total	493	100·0

Plums.

	Gm.	Per-centage.
Yellow (cooking)—		
Edible...	471	93·8
Waste...	31	6·2
Total	502	100·0
Yellow red (10)—"Victoria," eating—		
Edible	466	96·5
Waste...	17	3·5
Total	483	100·0
Red (eating) (3)—Pon Seedling—		
Edible	226	96·2
Waste...	9	3·8
Total	235	100·0
Blue (cooking)—		
Edible...	434	93·7
Waste...	29	6·3
Total	463	100·0
Blue red (10)—"Royal," eating—		
Edible	424	94·4
Waste...	25	5·6
Total	449	100·0

FRESH FRUITS.

PROPORTION OF EDIBLE AND WASTE—*continued.*

	Gm.	Per-centage.
Pumpkin.		
Section—		
Edible	304	66·5
Waste	153	33·5
Total ...	457	100·0
Raspberries.		
With stalk—		
Edible	346	91·5
Waste	32	38·5
Total ...	378	100·0

	Gm.	Per-centage.
Strawberries.		
Ordinary—		
Edible	440	93·4
Waste	31	6·6
Total ...	471	100·0
Selected—		
Edible	484	96·7
Waste	16·5	3·3
Total ...	500·5	100·0
Whortleberries.		
Edible	—	100

FRESH FRUITS.

ANALYTICAL DATA.

—	Acidity c.c. N/10 per 100 gm.	Water.	Ash.	Fibre.	Protein.	Fat.	Carbohydrate.		Un-determined.	Energy Value. Calories per—		
							" Glucose."	Cane Sugar.		100 gm.	1 oz.	1 lb.
Apples—												
Charles Ross	128·4	86·8	0·3	0·8	0·3	0·2	6·3	3·4	1·9	42·9	12·2	194·6
Cox's Orange Pippin ...	133·7	83·6	0·4	0·7	0·3	0·2	6·8	5·7	2·3	54·3	15·4	246·3
Codling (cooking) ...	204·0	85·6	0·3	0·7	0·4	0·2	6·2	1·9	4·7	36·7	10·4	166·5
Golden Nob	89·1	85·8	0·3	0·8	0·2	0·2	7·8	3·7	1·2	49·8	14·1	225·9
Pearmain	100·5	84·7	0·4	1·1	0·2	0·2	8·6	1·5	3·3	44·1	12·5	200·0
Quarenden	75·8	85·1	0·2	0·7	0·2	0·2	10·4	2·3	0·9	54·7	15·5	248·1
Mean	121·9	85·3	0·3	0·8	0·3	0·2	7·7	3·1	2·4	47·1	13·3	213·6
Bananas—												
Canary	112·7	68·5	0·9	1·5	1·6	0·1	8·0	0·0	19·4*	119·8	34·0	543·4
Jamaica	60·5	73·1	0·8	2·9	0·7	0·1	17·0	0·7	4·7*	95·6	27·1	433·6
Mean	86·6	70·8	0·8	2·2	1·2	0·1	12·5	0·3	12·1*	107·7	30·5	488·5
Blackberries—												
Cultivated	51·2	85·4	0·5	4·0	1·2	0·2	7·7	0·0	1·0	38·3	10·9	173·7
Wild	107·3	82·3	0·8	4·8	1·4	0·2	6·3	0·0	4·2	33·4	9·5	151·5
Mean	79·3	83·8	0·7	4·4	1·3	0·2	7·0	0·0	2·6	35·8	10·2	162·4

* Starch by difference.

FRESH FRUITS.

Analytical Data—*continued.*

—	Acidity c.c. N/10 per 100 gm.	Water.	Ash.	Fibre.	Protein.	Fat.	Carbohydrate.		Un-determined.	Energy Value. Calories per—		
							" Glucose."	Cane Sugar.		100 gm.	1 oz.	1 lb.
Cherries—												
Black	52·1	81·3	0·5	0·8	1·0	0·1	16·7	0·0	—	73·5	20·8	333·4
White	76·7	86·5	0·5	1·4	1·0	0·1	10·8	0·0	—	49·3	14·0	223·6
Cooking (Mayduke) ...	151·8	87·2	0·5	0·5	0·7	0·1	10·9	0·0	0·1	48·5	13·7	220·0
Mean	93·5	85·0	0·5	0·9	0·9	0·1	12·7	0·0	—	57·1	16·2	259·0
Currants—												
Black	466·0	80·8	0·9	2·4	1·3	0·2	8·0	0·0	6·4	40·0	11·3	181·4
Red	337·3	85·7	0·6	4·0	1·3	0·1	6·3	0·0	2·0	32·1	9·1	145·6
White	336·5	85·4	0·7	2·8	1·1	0·1	5·8	0·0	4·1	29·2	8·3	132·4
Mean	379·9	84·0	0·7	3·1	1·2	0·1	6·7	0·0	4·2	33·8	9·6	153·3
Damsons	352·3	83·8	0·6	0·4	0·4	0·2	7·7	0·1	6·8	35·5	10·1	161·0
Figs (English)	36·5	87·3	0·6	0·8	0·8	0·1	10·9	0·0	—	48·9	13·9	221·8
Gooseberries—												
Cooking...	359·0	89·7	0·4	1·9	0·7	0·1	5·0	0·1	2·1	24·7	7·0	112·0
Eating	223·2	88·9	0·4	1·2	0·7	0·1	6·4	0·4	1·9	31·7	9·0	143·8
Mean	291·1	89·3	0·4	1·6	0·7	0·1	5·7	0·3	2·0	28·2	8·0	127·9

Grapes—											
Alicante	113·4	83·7	0·4	1·3	0·8	0·1	15·2	0·0	—	66·5	18·8	301·6
Colmar	97·3	84·9	0·5	0·3	0·5	0·1	13·7	0·0	0·0	59·2	16·8	268·5
Hambro	76·3	81·3	0·5	0·4	0·6	0·1	17·4	0·0	—	74·7	21·2	338·8
Muscat	85·2	84·5	0·5	0·5	0·5	0·1	14·0	0·0	—	60·4	17·1	274·0
Muscat (1st quality) ...	84·4	84·5	0·5	0·7	0·6	0·1	13·5	0·0	0·1	58·7	16·6	266·3
Spanish	102·1	89·0	0·4	0·4	0·5	0·1	9·4	0·0	0·0	43·4	12·3	196·9
Mean	93·1	84·7	0·5	0·6	0·6	0·1	13·9	0·0	0·0	60·4	17·1	274·0
Grape Fruit	135·0	91·9	0·3	0·5	0·6	0·1	4·3	1·4	0·9	26·8	7·6	121·6
Greengages	196·4	82·7	0·6	2·0	0·7	0·2	7·2	3·6	3·0	49·0	13·9	222·3
Lemons	826·9	91·1	0·3	0·4	0·5	0·5	2·9	0·2	4·1	19·4	5·5	88·0
Melons—												
Canteloupe	9·8	94·5	0·4	0·4	0·5	0·1	3·3	0·3	0·5	17·7	5·0	80·3
English	10·4	92·7	0·6	0·2	0·7	0·0	4·3	1·5	0·0	26·7	7·6	121·1
Spanish	10·5	93·5	0·4	0·4	0·3	0·1	4·0	0·3	1·0	19·8	5·6	89·8
Mean	10·2	93·6	0·5	0·3	0·5	0·1	3·9	0·7	0·5	21·4	6·1	97·1
Mulberries	301·8	86·8	0·8	1·1	1·5	0·4	7·8	0·0	1·6	41·9	11·9	190·1
Nectarine	88·4	87·9	0·5	0·1	0·8	0·1	1·6	7·4	1·6	41·1	11·6	186·4
Oranges—												
Californian	127·7	86·0	0·5	0·4	0·9	0·1	5·7	3·8	2·6	43·6	12·4	197·8
South African	102·7	88·1	0·6	0·4	0·8	0·1	4·6	4·2	1·6	40·3	11·4	182·8
Tangier	129·2	86·8	0·4	0·5	0·6	0·1	3·5	4·6	3·5	36·6	10·4	166·0
Mean	119·9	87·0	0·5	0·4	0·8	0·1	4·6	4·2	2·6	40·2	11·4	182·2

FRESH FRUITS.

ANALYTICAL DATA—*continued.*

—	Acidity c.c. N/10 per 100 gm.	Water.	Ash.	Fibre.	Protein.	Fat.	Carbohydrate.		Un-determined.	Energy Value. Calories per—		
							" Glu cose,"	Cane Sugar.		100 gm.	1 oz.	1 lb.
Peach	97·2	89·5	0·6	0·5	0·8	0·1	2·4	2·3	3·8	23·5	6·7	106·6
Pears—												
Cooking (William) ...	32·1	84·5	0·4	2·4	0·5	0·1	7·1	0·3	4·7	33·3	9·4	151·0
,, ...	58·9	83·1	0·3	2·0	0·3	0·1	7·4	0·6	6·2	35·0	9·9	158·8
Eating (Hazel) ...	35·5	81·9	0·4	2·0	0·2	0·1	9·5	0·5	5·4	42·8	12·1	194·1
,, (William) ...	24·8	87·6	0·3	1·4	0·3	0·1	7·6	0·5	2·2	35·4	10·0	160·6
Mean	37·8	84·3	0·4	2·0	0·3	0·1	7·9	0·5	4·6	36·6	10·4	166·1
Pineapple	148·0	86·8	0·4	0·4	0·5	0·0	2·4	8·7	0·8	47·6	13·5	215·9
Plums—												
Cooking, Yellow ...	238·8	87·2	0·5	1·1	0·6	0·2	7·7	0·5	2·2	37·9	10·7	171·9
,, Blue	196·0	89·1	0·4	1·0	0·5	0·3	4·6	2·8	1·3	35·2	10·0	159·7
Eating—												
Yellow (Victoria) ...	186·3	85·7	0·4	0·8	0·4	0·3	5·4	4·9	2·1	46·7	13·2	211·8
Blue Red (Royal) ...	356·1	85·5	0·4	0·7	0·5	0·3	3·9	1·8	6·9	27·4	7·7	123·3
Red (Pon Seedling) ...	332·4	85·9	0·4	0·5	0·3	0·2	3·1	6·2	3·4	41·2	11·7	186·9
Mean	261·9	86·7	0·4	0·8	0·5	0·3	4·9	3·2	3·2	37·7	10·7	171·0
Pumpkin (Section) ...	7·6	95·3	0·4	0·3	0·4	0·0	2·8	0·0	0·8	13·1	3·7	59·4
Raspberries	232·0	86·8	0·6	3·1	1·2	0·1	6·6	0·0	1·6	32·9	9·3	149·2
Strawberries—												
Ordinary	120·6	91·7	0·4	0·8	0·6	0·1	6·2	0·0	0·2	28·8	8·2	130·6
Selected	121·7	88·6	0·5	0·9	0·7	0·1	10·2	0·0	—	45·6	12·9	206·8
Mean	121·2	90·1	0·5	0·9	0·7	0·1	8·2	0·0	0·1	37·2	10·5	168·7
Whortleberries	116·0	85·4	0·3	1·8	0·7	0·2	11·5	0·8	—	55·2	15·6	250·4

ANALYTICAL DATA CALCULATED TO ALLOW FOR WASTE.

—	Waste.	Acidity.	Water.	Ash.	Fibre.	Protein.	Total Carbo-hydrate.	Fat.	Energy Value. Calories per—		
									100 gm.	1 oz.	1 lb.
Apples—											
Charles Ross	6·6	119·9	81·1	0·3	0·7	0·3	9·1	0·2	40·4	11·5	183·2
Cox's Orange Pippin ...	6·3	125·3	78·3	0·4	0·7	0·3	11·7	0·2	51·1	14·5	231·8
Codling (Cooking) ...	6·7	190·3	79·9	0·3	0·6	0·4	7·6	0·2	34·7	9·8	157·4
Golden Nob	10·6	79·6	76·7	0·3	0·7	0·2	10·3	0·2	44·9	12·7	203·7
Pearmain	10·3	90·2	76·0	0·4	1·0	0·2	9·1	0·2	40·0	11·3	181·4
Quarenden	14·6	64·7	72·7	0·2	0·6	0·2	10·9	0·2	47·4	13·4	215·0
Mean	9·2	111·7	77·5	0·3	0·7	0·3	9·8	0·2	43·2	12·2	195·9
Banana—											
Canary	43·8	63·3	38·5	0·5	0·8	0·9	15·4	0·1	67·8	19·2	307·5
Jamaica	42·8	34·6	41·8	0·5	1·7	0·4	12·8	0·1	55·0	15·6	249·5
Mean	43·3	48·9	40·2	0·5	1·2	0·6	14·1	0·1	61·4	17·4	278·5
Cherries—											
Black	12·7	45·5	70·9	0·4	0·7	0·9	14·6	0·1	64·5	18·3	292·6
White	12·3	67·3	75·9	0·4	1·2	0·9	9·5	0·1	43·7	12·4	198·2
Cooking (Mayduke) ...	12·6	132·7	76·2	0·4	0·4	0·6	9·5	0·1	42·3	12·0	191·9
Mean	12·5	81·6	74·3	0·4	0·8	0·8	11·2	0·1	50·1	14·2	227·2

FRESH FRUITS.

Analytical Data Calculated to Allow for Waste—*continued.*

—	Waste.	Acidity.	Water.	Ash.	Fibre.	Protein.	Total Carbohydrate.	Fat.	Energy Value. Calories per— 100 gm.	1 oz.	1 lb.
Currants—											
Black	5·5	440·4	76·4	0·8	2·3	1·2	7·6	0·2	37·9	10·7	171·9
Red	4·4	322·5	81·9	0·6	3·8	1·2	6·0	0·1	30·4	8·6	137·9
White	3·6	324·5	82·3	0·7	2·7	1·1	5·6	0·1	28·4	8·0	128·8
Mean	4·5	362·5	80·2	0·7	2·9	1·2	6·4	0·1	32·2	9·1	146·1
Damsons	8·3	323·1	76·8	0·5	0·4	0·4	7·1	0·2	32·6	9·2	147·9
Figs	19·6	29·4	70·2	0·5	0·6	0·6	8·8	0·1	39·5	11·2	179·2
Gooseberries—											
Cooking	0·2	358·3	89·5	0·4	1·9	0·7	5·1	0·1	24·7	7·0	112·0
Eating	0·3	222·5	88·6	0·4	1·2	0·7	6·8	0·1	31·7	9·0	143·8
Mean	0·3	290·4	89·0	0·4	1·5	0·7	6·0	0·1	28·2	8·0	127·9
Grapes—											
Alicante	6·0	106·6	78·7	0·4	1·2	0·7	14·3	0·1	62·4	17·7	283·0
Colma	4·9	92·5	80·7	0·5	0·3	0·5	13·0	0·1	56·3	16·0	255·4
Hambro	5·5	72·1	76·8	0·5	0·4	0·6	16·4	0·1	70·6	20·0	320·2
Muscat	4·7	81·2	80·5	0·5	0·5	0·5	13·3	0·1	57·5	16·3	260·8
,, (1st quality) ...	3·0	81·9	82·0	0·5	0·7	0·6	13·1	0·1	57·1	16·2	259·0
Spanish	6·7	95·3	83·0	0·4	0·4	0·5	8·8	0·3	40·9	11·6	185·5
Mean	5·1	88·3	80·3	0·5	0·6	0·6	13·2	0·1	57·5	16·3	260·8

Grape Fruit	30·0	94·5	64·3	0·2	0·4	0·4	4·0	0·1	19·0	5·4	86·2
Greengages	5·5	185·6	78·1	0·6	1·9	0·7	10·2	0·2	46·6	13·2	211·4
Lemons	32·1	561·5	29·2	0·1	0·1	0·2	1·0	0·2	6·8	1·9	30·8
Melons—											
Canteloupe	54·8	4·4	42·7	0·2	0·2	0·2	1·6	0·0	7·4	2·1	33·6
English	42·1	6·0	53·7	0·3	0·1	0·4	3·4	0·0	15·6	4·4	70·8
Spanish	37·2	6·6	58·7	0·2	0·2	0·2	2·7	0·1	12·8	3·6	58·1
Mean	44·7	5·7	51·7	0·2	0·2	0·3	2·6	0·0	11·9	3·4	54·2
Nectarines	5·3	83·7	83·2	0·5	0·1	0·8	8·5	0·1	39·1	11·1	177·4
Oranges—											
Californian	24·0	97·0	65·4	0·4	0·3	0·7	7·2	0·1	33·3	9·4	151·0
South African	29·4	72·5	62·2	0·4	0·3	0·6	6·2	0·1	28·8	8·2	130·6
Tangier	22·0	100·8	67·7	0·3	0·4	0·5	6·3	0·1	28·8	8·2	130·6
Mean	25·1	90·1	65·1	0·4	0·3	0·6	6·6	0·1	30·3	8·6	137·4
Peach...	7·0	90·4	83·2	0·6	0·5	0·7	4·4	0·1	21·8	6·2	98·9
Pears—											
Cooking (William) ...	11·4	28·4	74·9	0·3	2·1	0·4	6·6	0·1	29·6	8·4	134·3
,, ...	12·6	51·5	72·6	0·3	1·8	0·3	7·1	0·1	31·3	8·9	142·0
Eating (Hazel)	12·8	31·0	71·4	0·4	1·7	0·2	8·7	0·1	37·4	10·6	169·6
,, (William) ...	12·6	21·7	76·6	0·3	1·2	0·3	7·1	0·1	31·3	8·9	142·0
Mean	12·3	33·2	73·9	0·3	1·7	0·3	7·4	0·1	32·4	9·2	147·0
Pineapple	32·7	99·6	58·4	0·3	0·3	0·3	7·5	0·0	32·0	9·1	145·1

FRESH FRUITS.

Analytical Data Calculated to Allow for Waste—*continued.*

—	Waste.	Acidity.	Water.	Ash.	Fibre.	Protein.	Carbo-hydrate.	Fat.	Energy Value. Calories per—		
									100 gm.	1 oz.	1 lb.
Plums—											
Cooking, Yellow	6·2	224·0	81·8	0·5	1·0	0·6	7·7	0·2	35·9	10·2	162·8
,, Blue	6·3	183·6	83·5	0·4	0·9	0·5	6·9	0·3	33·1	9·4	150·1
Eating, Yellow (Victoria)	3·5	179·8	82·7	0·4	0·8	0·4	9·9	0·3	45·0	12·8	204·1
,, Blue-Red (Royal)	5·6	336·2	80·7	0·4	0·7	0·5	5·4	0·3	27·0	7·6	122·5
,, Red (Pon Seedling)	3·8	319·8	82·6	0·4	0·5	0·3	9·0	0·2	40·0	11·3	181·4
Mean	5·1	248·7	82·3	0·4	0·8	0·5	7·8	0·3	36·2	10·3	164·2
Pumpkin	33·5	5·0	63·4	0·3	0·2	0·3	1·9	0·0	9·0	2·6	40·8
Raspberries	8·5	212·3	79·4	0·5	2·8	1·1	6·0	0·1	30·0	8·5	136·1
Strawberries—											
Ordinary	6·6	112·6	85·6	0·4	0·7	0·6	5·8	0·1	27·2	7·7	123·4
Selected	3·3	117·7	85·7	0·5	0·9	0·7	9·9	0·1	44·4	12·6	201·4
Mean	5·0	115·2	85·6	0·5	0·8	0·7	7·9	0·1	35·8	10·2	162·4

DRIED FRUITS.

A very complete set of dried fruits was obtainable on the market, but there was no possible differentiation into "selected" and ordinary varieties—except in the case of dates, where two varieties have been purchased. Real sultanas were obtained, but a small raisin is sometimes sold as sultana.

In the case of dried fruits, the whole fruit as purchased is generally eaten, except in the cases of dates and prunes. Here the stone was separated, and its percentage ascertained.

In all cases there is a considerable amount of undetermined matter. This is probably water, as it is practically impossible to drive off water by heating from sticky substances containing "glucose."

The undetermined matter has been assumed to be starch in the case of banana, as it is well known that this fruit contains starch in its fresh state.

It is curious that currants and prunes contain approximately 20 per cent. less "glucose" than the other dried fruits. They have a very high amount of undetermined matter. Further chemical examination will be necessary to ascertain the composition of this undetermined matter.

Proportions of Parts.

Dates (1).

	Gm.	Per-centage.
Edible	204	85
Stone	36	15
	240	100

Dates (2).

	Gm.	Per-centage.
Edible	65	89
Stone	8	11
	73	100

Prunes.

	Gm.	Per-centage.
Edible	207	83·8
Stone	40	16·2
	247	100·0

DRIED FRUITS.

ANALYTICAL DATA.

—	Acidity c.c. N/10 per 100 gm.	Water.	Ash.	Fibre.	Protein.	Fat.	Carbohydrate.		Un-determined.	Energy Value. Calories per—		
							" Glucose."	Cane Sugar.		100 gm.	1 oz.	1 lb.
Apple rings	352·1	25·1	1·1	2·6	0·9	0·6	49·4	9·3	11·0	249·9	70·8	1,133·5
Apricots	636·4	27·9	3·3	2·6	5·5	0·3	23·9	25·7	10·8	228·7	64·8	1,037·4
Bananas	153·0	21·4	2·5	3·4	2·5	0·2	61·2	2·2	*6·6	299·1	84·8	1,156·7
Currants	101·0	20·5	2·6	2·3	1·7	0·3	42·0	0·0	30·6	182·0	51·6	825·6
Dates	41·8	21·8	2·0	2·3	1·6	0·1	69·7	0·0	2·5	293·3	83·2	1,330·4
„ less 15 per cent. for stone	35·5	18·5	1·7	2·0	1·4	0·1	59·2	0·0	2·1	249·4	70·7	1,131·3
„ Turban	39·3	19·3	2·0	1·8	1·6	0·2	66·8	0·0	8·3	282·3	80·0	1,280·5
„ „ less 11 per cent. for stone ...	35·0	17·2	1·8	1·6	1·4	0·2	59·4	0·0	7·4	251·1	71·2	1,139·0
Figs	88·7	20·8	2·3	4·2	2·0	0·5	53·2	3·3	3·7	244·5	69·3	1,109·0
Peel, candied	38·1	22·0	1·3	2·3	0·3	0·1	38·1	28·7	7·2	276·0	78·2	1,251·9
Prunes	297·3	28·1	1·9	1·8	3·0	0·3	40·4	0·0	24·5	180·7	51·2	819·6
„ less 16·2 per cent. for stone ...	249·1	23·5	1·6	1·5	2·5	0·2	33·9	0·0	20·5	151·1	42·8	685·4
Raisins	191·7	19·3	2·5	4·1	2·2	0·3	61·2	0·0	10·4	262·7	74·5	1,191·6
Sultanas	149·4	18·5	2·3	1·1	1·7	0·3	64·9	0·0	11·2	275·9	78·2	1,251·5

JAM, HONEY, ETC.

Twelve varieties of jam by different makers were procured; most were of 1917 manufacture, but some were made in 1918.

The commercial jams have on the average about 69 per cent. of sugar.

A comparison with home-made jam, in which less than the usual amount of sugar was used in preparation, is interesting.

Jam has approximately the same sugar content as honey.

The sugar has been estimated in terms of reducing sugar as glucose and cane sugar; in most cases the amount of reducing sugar exceeds that of glucose. It is accounted for by the action of the acid fruit juices upon the cane sugar, producing hydrolysis.

The undetermined matter may be organic acids, or possibly more water, for it is difficult to remove all water from syrups.

JAM, HONEY, ETC.

Analytical Data.

—	Water.	Ash.	Fibre.	Protein.	Carbohydrate.		Un-determined.	Energy Value. Calories per—		
					Reducing Hexose as Glucose.	Cane Sugar.		100 gm.	1 oz.	1 lb.
Damson (1)	26·2	0·33	0·70	0·3	56·3	13·7	2·47	288·2	81·7	1,307·3
,, (2)	23·7	0·42	0·76	0·3	50·9	18·8	5·12	287·0	81·4	1,301·8
Gooseberry and Apple	26·2	1·41	1·14	0·2	69·0	2·1	—	292·3	82·9	1,325·9
Plum and Apple	27·9	0·23	0·72	0·2	27·2	42·3	1·45	285·8	81·0	1,296·4
Strawberry	29·3	0·28	1·37	0·3	47·4	19·0	2·35	273·5	77·5	1,240·6
Peach	26·6	0·20	0·60	0·2	33·4	39·1	—	298·1	84·5	1,352·2
Pear	24·0	0·20	0·60	0·2	23·0	46·7	5·30	286·6	81·2	1,300·0
Plum	24·0	0·85	0·63	0·2	39·6	30·4	4·32	287·8	81·6	1,305·5
Rhubarb	32·6	0·45	1·50	0·5	45·7	19·9	—	271·0	76·8	1,229·3
Scotch Marmalade	28·5	0·17	1·07	0·1	30·7	37·4	2·06	279·6	79·3	1,268·3
Marmalade (1)	27·9	0·17	0·68	0·2	67·0	1·6	2·45	282·1	80·0	1,280·4
,, (2)	21·7	0·22	2·24	0·3	36·6	35·3	2·64	296·0	83·9	1,342·7
Mean	26·6	0·40	1·00	0·3	43·9	25·5	2·30	285·8	81·0	1,296·4
Home-made Gooseberry ...	40·2	0·70	3·50	0·9	55·3	0·0	—	230·4	65·3	1,045·1
Golden Syrup	15·1	0·90	0·0	0·3	44·5	31·9	7·30	314·5	89·2	1,426·6
Honey	18·3	0·30	0·10	0·4	69·2	2·2	9·50	294·4	80·6	1,290·0
Treacle	23·4	4·20	—	0·2	19·1	40·8	12·30	246·4	69·9	1,117·7

NUTS.

Nuts are in some cases sold in shell and in some cases without shell. In those cases in which they are sold complete, the shell has been removed, and the proportion of shell and kernel ascertained.

There is considerable variation in the analytical data, but a fair mean figure is obtained if the chestnut and coconut milk are excluded.

The value of the whole nut, as purchased, is calculated by multiplying the analytical data by the percentage amount of the edible matter in the whole nut.

Proportions of Shell and Kernel in Complete Nut.

30 *Almonds.*

	Gm.	Percentage.
Kernel	44·5	29·7
Shell	105·5	70·3
Total ...	150·0	100·0

24 *Brazils.*

Kernel	126	53·2
Shell	111	46·8
Total ...	237	100·0

26 *Chestnuts.*

Kernel	165	85·5
Shell	28	14·5
Total ...	193	100·0

63 *Cobs or Filberts.*

Kernel	85·5	40·5
Shell	125·5	59·5
Total ...	211·0	100·0

1 *Coconut.*

	Gm.	Percentage.
Flesh	369	51·3
Milk	145	20·1
Shell	206	28·6
Total ...	720	100·0

100 *Peanuts.*

Kernel	62·0	69·3
Shell	27·5	30·7
Total ...	89·5	100·0

24 *Walnuts, dried.*

Kernel	94	45·0
Shell	115	55·0
Total ...	209	100·0

19 *Walnuts, fresh.*

Kernel	82	40·6
Shell	120	59·4
Total ...	202	100·0

NUTS.

Analytical Data of Edible Parts.

—	Water.	Ash.	Fibre.	Protein.	Carbohydrate. by Diff.	Fat.	Energy Value. Calories per—		
							100 gm.	1 oz.	1 lb.
Almond—									
Jordan	4·2	3·2	2·9	22·0	15·5	52·2	639·2	181·2	2,899·4
Valencia	3·6	3·1	3·1	18·6	15·2	56·4	663·1	188·0	3,007·8
In shell	3·1	3·0	3·6	15·7	17·4	57·2	667·7	189·3	3,028·7
Mean	3·6	3·1	3·2	18·8	16·0	55·3	656·7	186·2	2,978·6
Brazil	2·9	3·3	2·1	13·2	8·1	70·4	742·1	210·4	3,366·2
Chestnut	44·3	0·9	1·7	3·0	48·2	1·9	227·6	64·5	1,032·4
Coconut—									
Flesh	37·3	0·8	1·5	4·2	7·7	48·5	499·8	141·8	2,267·1
Milk...	92·6	0·6	—	0·2	5·2	—	22·1	6·3	100·3
Cob or filbert	11·2	2·7	2·4	14·3	17·8	51·6	611·5	173·4	2,773·8
Hazel	3·7	2·7	2·9	13·2	14·3	63·2	700·5	198·6	3,177·5
Peanut...	4·1	2·5	3·6	20·1	22·1	47·6	615·7	174·6	2,792·8
Pine kernels	4·4	4·0	1·6	31·4	10·6	48·0	618·6	175·4	2,806·0
Walnuts—									
Dried	2·2	2·0	1·8	13·6	14·0	66·4	730·7	207·1	3,314·5
In shell	3·0	2·3	1·3	20·7	13·8	58·9	689·2	195·4	3,126·2
Fresh	11·4	1·8	1·1	15·8	11·1	58·8	657·1	186·3	2,980·6
Mean (excluding chestnut and coconut milk)	8·4	2·5	2·2	16·5	13·6	56·9	652·6	185·0	2,960·2

ANALYTICAL DATA CALCULATED FOR WHOLE NUT AS PURCHASED.

—	Percentage of Edible Matter.	Water.	Ash.	Fibre.	Protein.	Carbohydrate.	Fat.	Energy Value. Calories per—		
								100 gm.	1 oz.	1 lb.
Almond in shell	29·7	0·9	0·9	1·1	4·7	5·2	17·0	198·7	56·3	901·3
Brazil	53·2	1·5	1·8	1·1	7·0	4·3	37·4	394·2	111·8	1,788·1
Chestnut	85·5	37·9	0·8	1·4	2·6	41·2	1·6	194·5	55·1	882·3
Coconut—										
Flesh	51·3	19·1	0·4	0·8	2·1	3·9	24·9	256·2	72·6	1,162·1
Milk	20·1	18·6	0·1	—	0·0	1·0	—	4·1	1·2	18·6
Whole interior	71·4	37·7	0·5	0·8	2·1	4·9	24·9	260·3	73·8	1,180·7
Cob or filbert	40·5	4·5	1·1	1·0	5·8	7·2	20·9	247·7	70·2	1,123·6
Peanut	69·3	2·8	1·7	2·5	13·9	15·3	33·0	426·6	120·9	1,935·1
Walnuts—										
Dried, in shell	45·0	1·4	1·0	0·6	9·3	6·2	26·5	310·0	87·9	1,406·2
Fresh, in shell	40·6	4·6	0·7	0·4	6·4	4·5	23·9	267·0	75·7	1,211·1

CHOCOLATE, COCOA AND SUGAR.

The analyses of chocolate and cocoa do not show so much variation as might have been expected. Eleven samples of chocolate and six of cocoa have been analysed. The mean value is a very fair figure.

Brown sugar is impure, whereas white sugar is a very pure foodstuff. Five varieties of white sugar all contain approximately 100 per cent. of sucrose.

CHOCOLATE.

ANALYTICAL DATA.

—	Water.	Ash.	Fibre.	Protein.	Carbohydrate.		Fat.	Energy Value. Calories per—		
					Cane Sugar.	Starch by Diff.		100 gm.	1 oz.	1 lb.
Sample No. 1	1·0	1·2	1·1	4·5	59·4	0·4	32·4	565·0	160·2	2,562·8
,, ,, 2	1·1	1·5	2·1	4·2	57·3	8·2	25·6	523·9	148·5	2,376·4
,, ,, 3	0·6	1·2	1·4	4·7	52·1	9·3	30·7	556·5	157·8	2,524·3
,, ,, 4	1·0	1·4	1·6	5·2	42·6	10·1	38·1	591·7	167·7	2,683·9
,, ,, 5	0·8	1·2	1·4	4·4	61·9	4·0	26·3	532·8	151·1	2,416·8
,, ,, 6	0·8	1·2	1·3	4·6	49·8	8·8	33·5	570·7	161·8	2,588·7
,, ,, 7	1·4	1·2	3·9	3·3	52·2	9·1	28·9	533·6	151·3	2,420·4
,, ,, 8	1·1	1·6	0·7	6·0	46·0	11·5	33·1	568·2	161·1	2,577·4
,, ,, 9	1·5	2·2	3·5	7·1	42·0	8·2	35·5	565·1	160·2	2,563·3
,, ,, 10	1·1	1·2	1·6	4·0	28·2	36·4	27·5	537·0	152·2	2,435·8
,, ,, 11	1·2	1·4	1·4	4·3	54·7	6·1	30·9	554·3	157·1	2,514·3
Mean	1·0	1·4	1·8	4·8	49·7	10·2	31·1	554·4	157·2	2,514·8

COCOA.

ANALYTICAL DATA.

—	Water.	Ash.	Fibre.	Protein.	Carbohydrate.		Fat.	Energy Value. Calories per—		
					Cane Sugar.	Starch by Diff.		100 gm.	1 oz.	1 lb.
Sample No. 1	5·3	7·5	3·6	17·8	—	38·6	27·2	484·2	134·8	2,196·3
,, ,, 2	5·4	4·9	4·2	16·8	—	40·9	27·8	495·1	140·4	2,245·8
,, ,, 3	5·1	5·4	3·8	17·7	—	40·8	27·2	492·8	139·7	2,235·3
,, ,, 4	4·7	4·8	3·4	19·3	—	42·6	25·2	488·2	138·4	2,214·5
,, ,, 5	3·5	7·9	3·9	19·1	—	39·9	25·7	480·9	136·3	2,181·4
,, ,, 6	5·6	7·1	3·3	17·7	—	38·7	27·6	487·9	138·3	2,213·1
Mean	4·9	6·3	3·7	18·1	—	40·3	26·8	488·2	138·4	2,214·5

SUGAR.

Brown (Demerara)	0·7	0·1	—	—	98·0	—	—	401·8	113·9	1,822·6
Candy sugar	—	—	—	—	100·0	—	—	410·0	116·2	1,859·8
Castor	—	—	—	—	100·0	—	—	410·0	116·2	1,859·8
Granulated...	—	—	—	—	100·0	—	—	410·0	116·2	1,859·8
Hard icing...	—	—	—	—	100·0	—	—	410·0	116·2	1,859·8
Lump	—	—	—	—	100·0	—	—	410·0	116·2	1,859·8

SUMMARY OF ANALYSES FOR ARMY USE AND INDEX.

—	Per cent.			Energy Value per kilo.	Per lb.			Energy Value per lb.	Index Page.
	Protein.	Fat.	Carbo-hydrate.		Protein.	Fat.	Carbo-hydrate.		
	Gm.	Gm.	Gm.	Calories.	Gm.	Gm.	Gm.	Calories.	
Bacon—									67–71
Back	9·1	59·9	—	5,944	41·3	271·7	—	2,696	
Gammon, whole	11·7	44·6	—	4,628	53·1	202·3	—	2,099	
Shoulder, whole	7·9	57·6	—	5,681	35·8	261·3	—	2,577	
Streaky, whole	10·3	54·2	—	5,463	46·7	245·8	—	2,478	
Whole side	9·5	54·6	—	5,467	43·1	247·7	—	2,480	
Whole side less 3·7 per cent. for skin ...	9·1	52·6	—	5,365	41·3	238·6	—	2,388	
Biscuit—									195
Army Button	13·1	1·2	75·2	3,732	59·4	5·4	341·1	1,693	
„ Square	11·9	0·3	76·3	3,644	54·0	1·4	346·1	1,653	
Mean	12·5	0·7	75·8	3,688	56·7	3·4	343·6	1,673	
Bread—									190–194
Brown—Mean of 5 varieties	7·0	0·4	47·7	2,232	31·8	1·8	216·4	1,012	
White—Mean of 12 samples	7·2	0·2	48·1	2,286	32·7	0·9	218·2	1,037	
Mean of 21 breads	7·0	0·2	47·4	2,235	31·8	0·9	215·0	1,014	

SUMMARY OF ANALYSES FOR ARMY USE AND INDEX—*continued.*

—	Per cent.			Energy Value per kilo.	Per lb.			Energy Value per lb.	Index Page.
	Protein.	Fat.	Carbo-hydrate.		Protein.	Fat.	Carbo-hydrate.		
	Gm.	Gm.	Gm.	Calories.	Gm.	Gm.	Gm.	Calories.	
Butter—									86–87
Mean of 2 varieties	0·2	83·0	—	7,722	0·9	376·5	—	3,503	
Cereals—									184–189
Barley—									186
Grain	10·4	1·2	68·9	3,363	47·2	5·4	312·5	1,526	
Meal	10·6	4·2	66·3	3,544	48·1	19·0	300·7	1,608	
Flour	10·7	4·1	69·5	3,670	48·5	18·6	315·2	1,665	
Pot	7·0	0·8	79·9	3,637	31·7	3·6	362·4	1,650	
" Kernel "	8·0	1·4	77·8	3,648	36·3	6·3	352·9	1,655	
Buckwheat grain	12·1	1·9	62·3	3,227	54·9	8·6	282·6	1,464	
Maize—									186
Grain	9·9	4·2	72·5	3,769	44·9	19·0	328·9	1,710	
Meal	9·9	2·1	77·4	3,775	44·9	9·5	351·1	1,712	
Hominy	7·0	0·5	80·5	3,634	31·7	2·3	365·1	1,648	
Cornflour...	0·8	0·1	87·6	3,634	3·6	0·4	397·3	1,648	
Millet grain, Japanese	11·2	2·9	68·9	3,554	50·8	13·1	313·5	1,612	

Oats—									186
Grain	8·2	5·6	62·6	3,424	37·2	25·4	283·9	1,553	
Groats	12·0	8·4	68·3	4,074	54·4	38·1	309·8	1,848	
Coarse meal	12·3	8·2	69·9	4,133	55·8	37·2	317·1	1,875	
Medium meal	11·9	8·6	70·0	4,158	54·0	39·0	317·5	1,886	
Fine meal	11·7	8·3	69·3	4,093	53·1	37·6	314·3	1,857	
Mean of groats and meal ...	12·0	8·4	69·4	4,114	54·4	38·1	314·8	1,866	
Oats—									187
Rolled (1)	12·9	6·3	69·0	3,944	58·5	28·6	313·0	1,789	
,, (2)	13·3	6·7	69·9	4,034	60·3	30·4	317·1	1,830	
Mean of rolled oats... ...	13·1	6·5	69·5	3,989	59·4	29·5	315·2	1,809	
Rice—									187
Unpolished	6·8	0·6	80·0	3,615	30·8	2·7	362·9	1,640	
Polished, Indian	5·9	0·4	80·3	3,571	26·8	1·8	364·2	1,620	
Ground	6·4	0·3	81·6	3,636	29·0	1·4	370·1	1,649	
Flaked	6·1	0·3	81·7	3,628	27·7	1·4	370·6	1,646	
Mixed sample	6·7	0·4	81·1	3,637	30·4	1·8	367·9	1,650	
Honduras	7·2	0·4	80·0	3,612	32·7	1·8	362·9	1,638	
Mean	6·5	0·4	80·8	3,617	29·5	1·8	266·5	1,640	

SUMMARY OF ANALYSES FOR ARMY USE AND INDEX—*continued.*

—	Per cent.			Energy Value per kilo.	Per lb.			Energy Value per lb.	Index Page.
	Protein.	Fat.	Carbo-hydrate.		Protein.	Fat.	Carbo-hydrate.		
	Gm.	Gm.	Gm.	Calories.	Gm.	Gm.	Gm.	Calories.	
Cereals—									184–189
Rye—									187
Grain	6·6	1·2	77·3	3,552	29·9	5·4	350·6	1,611	
Flour (1)	6·1	0·8	81·7	3,674	27·7	3·6	370·6	1,667	
,, (2)	7·5	1·4	80·6	3,742	34·0	6·3	365·6	1,697	
Mean of rye flour	6·8	1·1	81·1	3,708	30·8	5·0	367·9	1,682	
Wheat—									187
Grain	10·9	1·2	70·4	3,445	49·4	5·4	319·3	1,563	
Flour (1)...	11·1	1·3	76·1	3,716	50·3	5·9	345·2	1,686	
,, (2)...	12·7	1·4	74·0	3,685	57·6	6·3	335·7	1,672	
,, (3)...	14·0	2·3	69·4	3,633	63·5	10·4	314·8	1,648	
Bran (1)	13·7	2·4	57·9	3,159	62·1	10·9	262·6	1,433	
,, (2)	14·1	3·9	57·8	3,311	64·0	17·7	262·2	1,511	
Offal	15·3	5·0	58·2	3,479	69·4	22·7	264·0	1,578	
Middlings	12·4	1·1	73·9	3,641	56·3	5·0	335·2	1,652	
Germ	24·3	7·5	51·1	3,789	110·2	34·0	231·8	1,719	
Semolina...	11·4	1·1	75·3	3,657	51·7	5·0	341·6	1,659	
Meal	11·7	2·0	71·9	3,614	53·1	9·1	326·1	1,639	
Shredded...	9·8	1·1	77·7	3,690	44·4	5·0	352·4	1,674	

Cereal Products, etc.—									188
Arrowroot	0·2	0·03	88·44	3,555	0·9	0·1	392·1	1,613	
Grape Nuts	9·5	0·5	80·1	3,720	43·1	2·3	363·3	1,687	
Macaroni—									
Fancy shape	12·1	0·1	76·4	3,638	54·9	0·4	346·5	1,650	
Stick	12·8	0·2	75·5	3,639	58·1	0·9	342·5	1,651	
Spaghetti	10·9	0·3	77·4	3,648	49·4	1·4	351·1	1,655	
Vermicelli	11·5	0·1	77·4	3,654	52·2	0·4	351·1	1,657	
Pates d'Italie	11·3	0·4	77·3	3,670	51·3	1·8	350·6	1,665	
Mean of above 5	11·7	0·2	76·8	3,650	53·1	0·9	348·4	1,656	
Fresh Italian	9·0	0·1	64·2	3,010	40·8	0·4	291·2	1,365	
Potato flour	0·3	0·04	86·53	3,564	1·4	0·2	392·5	1,617	
Sago...	0·2	0·02	87·71	3,606	0·9	0·1	397·8	1,636	
Tapioca	0·2	0·05	87·74	3,610	0·9	0·2	398·0	1,638	
,, Bullet	0·2	0·08	88·99	3,664	0·9	0·4	403·7	1,662	
,, Seed	0·2	0·02	89·57	3,682	0·9	0·1	496·3	1,670	
Cheese—			Undetermined.						84–85
Hard, full milk—Mean of varieties ...	25·7	35·0	3·1	4,434	116·6	158·8	14·1	2,011	
Hard, skim milk	32·2	11·6	9·4	2,786	146·1	52·6	42·6	1,260	
Stilton (hard and cream)...	26·3	42·8	2·5	5,161	119·3	194·1	11·3	2,341	
Extra hard (Parmesan)	33·7	34·9	4·4	4,808	152·9	158·3	20·0	2,181	
Soft—Mean of 3 varieties	22·1	30·3	3·1	3,851	100·2	137·4	14·1	1,747	

SUMMARY OF ANALYSES FOR ARMY USE AND INDEX—*continued.*

—	Per cent.			Energy Value per kilo.	Per lb.			Energy Value per lb.	Index Page.
	Protein.	Fat.	Carbo-hydrate.		Protein.	Fat.	Carbo-hydrate.		
	Gm.	Gm.	Gm.	Calories.	Gm.	Gm.	Gm.	Calories.	
Chocolate—									217
Mean of 11 varieties	4·8	31·1	59·9	5,544	21·8	141·1	271·7	2,515	
Cocoa—									218
Mean of 6 varieties	18·1	26·8	40·3	4,882	82·1	121·6	182·8	2,215	
Dripping	—	100·0	—	9,300	—	—	—	4,219	87
Eggs—			Undetermined.				Undetermined.		75–81
Dried—Mean of 6 varieties	40·3	39·6	9·5	5,727	182·8	179·6	43·1	2,598	
Fresh, Hen's with shell	11·1	10·1	1·4	1,453	50·3	45·8	6·3	659	
,, Duck's with shell...	10·9	13·8	1·5	1,795	49·4	62·6	6·8	814	
Fish—			Carbo-hydrate.				Carbo-hydrate.		125–156
Bass—									145
Including skin	12·6	1·8	0·1	688	57·2	8·2	0·4	312	
Excluding skin	11·2	1·5	0·1	599	50·8	6·8	0·4	272	
Bream—									145
Including skin	7·6	0·6	—	367	34·5	2·7	—	167	

Brill—									149
Including skin	13·5	1·8	—	721	61·2	8·2	—	327	
Excluding skin	11·6	1·5	—	615	52·6	6·8	—	279	
Cockles, salted—									155
Unwashed	13·2	0·4	7·0	863	59·9	1·8	31·8	392	
Codling—									146
Including skin	11·3	0·1	—	473	51·3	0·4	—	215	
Excluding skin	9·8	0·1	—	411	44·4	0·4	—	186	
Cod, section—									147
Including skin	15·7	0·1	—	653	71·2	0·4	—	296	
Excluding skin	14·6	0·1	—	608	66·2	0·4	—	276	
Conger Eel—									149
Including skin	15·3	0·1	—	637	69·4	0·4	—	289	
Excluding skin	12·5	0·1	—	522	56·7	0·4	—	237	
Crab—									
Flesh only	22·4	0·2	1·1	982	101·6	0·9	5·0	445	137
Edible matter only	19·1	2·8	2·4	1,142	86·6	12·7	10·9	518	
Edible matter less waste	7·8	1·1	1·0	463	35·4	5·0	4·5	210	156
Dab—									149
Including skin	13·8	1·1	—	668	62·6	5·0	—	303	
Excluding skin	11·7	0·7	—	545	53·1	3·2	—	247	
Dogfish—									142
Including skin	11·9	11·9	—	1,595	54·0	54·0	—	724	
Excluding skin	10·1	11·7	—	1,502	45·8	53·1	—	681	
Excluding skin and liver	9·7	2·8	—	658	44·0	12·7	—	299	
Eel—									153
Excluding skin	8·7	15·1	—	1,761	39·5	68·5	—	799	
Flounder—									150
Including skin	10·2	0·2	—	437	46·3	0·9	—	198	
Excluding skin	7·8	0·1	—	329	35·4	0·4	—	149	

SUMMARY OF ANALYSES FOR ARMY USE AND INDEX—*continued.*

—	Per cent.			Energy Value per kilo.	Per lb.			Energy Value per lb.	Index Page.
	Protein.	Fat.	Carbo-hydrate.		Protein.	Fat.	Carbo-hydrate.		
Fish—continued—	Gm.	Gm.	Gm.	Calories.	Gm.	Gm.	Gm.	Calories.	
Grey gurnet—									144
Including skin	12·8	1·4	—	655	58·1	6·4	—	297	
Excluding skin	11·4	1·3	—	588	51·7	5·9	—	267	
Red gurnet—									143
Including skin	10·2	1·0	0·2	519	46·3	4·5	0·9	235	
Excluding skin	9·1	0·5	0·2	428	41·3	2·3	0·9	194	
Hake—									147
Including skin	12·4	0·6	—	564	56·3	2·7	—	256	
Excluding skin	11·8	0·6	—	540	53·5	2·7	—	245	
Halibut—									150
Including skin	14·5	0·4	—	632	65·8	1·8	—	287	
Excluding skin	13·2	0·3	—	569	59·9	1·4	—	258	
Haddock, fresh—									146
Excluding skin	12·0	0·2	—	511	54·4	0·9	—	232	
Haddock, smoked—									146
Excluding skin	14·9	0·2	—	630	67·6	0·9	—	286	
Herring, bloater—									
(*a*) Male—									139
Including skin	16·7	10·4	—	1,652	75·6	47·2	—	749	
Excluding skin	15·7	9·6	—	1,537	71·2	43·5	—	697	

(*b*) Female—									140
Including skin	15·9	9·1	—	1,498	72·1	41·3	—	679	
Excluding skin	14·9	8·3	—	1,383	67·6	37·7	—	627	
Mean including skin ...	16·2	9·8	—	1,575	73·5	44·4	—	715	
Mean excluding skin ...	15·3	9·0	—	1,460	69·4	40·8	—	662	
Herring, fresh—									138
(*a*) Yearling—									
Including skin	12·1	11·0	—	1,514	54·9	49·9	—	687	
(*b*) Male—									
Including skin	16·2	8·5	—	1,455	73·5	38·6	—	660	
Excluding skin	13·1	7·1	—	1,279	68·5	32·2	—	580	
(*c*) Female—									
Including skin	15·3	11·7	—	1,715	69·4	53·1	—	778	
Excluding skin	14·0	10·4	—	1,541	63·5	47·2	—	699	
Mean of (*a*), (*b*), (*c*) including skin	14·5	10·4	—	1,562	65·8	47·2	—	709	
Mean of (*b*), (*c*) including skin ...	15·8	10·1	—	1,587	71·7	45·8	—	720	
Mean of (*b*), (*c*) excluding skin ...	14·6	8·8	—	1,417	66·2	39·9	—	643	
Herring, kipper—									140
Including skin	15·6	14·4	—	1,979	70·8	65·3	—	898	
Excluding skin	14·1	11·1	—	1,610	64·0	50·4	—	730	

SUMMARY OF ANALYSES FOR ARMY USE AND INDEX—*continued.*

—	Per cent.			Energy Value per kilo.	Per lb.			Energy Value per lb.	Index Page.
	Protein.	Fat.	Carbo-hydrate.		Protein.	Fat.	Carbo-hydrate.		
Fish—continued—	Gm.	Gm.	Gm.	Calories.	Gm.	Gm.	Gm.	Calories.	
Herrings, salted—									139
(*a*) Male—									
Including skin	23·1	19·3	—	2,842	104·8	87·5	—	1,289	
Excluding skin	21·2	15·4	—	2,301	96·2	69·9	—	1,044	
(*b*) Female—									
Including skin	25·3	12·9	—	2,237	114·8	58·5	—	1,015	
Excluding skin	23·1	9·8	—	1,859	104·8	44·4	—	843	
Mean including skin	24·2	16·1	—	2,489	109·8	73·0	—	1,129	
Mean excluding skin	22·2	12·6	—	2,080	100·7	57·2	—	944	
John Dory—									151
Including skin	9·3	0·7	—	446	42·2	3·2	—	202	
Excluding skin	8·3	0·6	—	396	37·7	2·7	—	180	
Ling—									148
Including skin	15·5	0·4	—	673	70·3	1·8	—	305	
Excluding skin	13·6	0·4	—	595	61·7	1·8	—	270	
Lobster—									
Flesh only	19·7	0·3	1·9	914	89·4	1·4	8·6	415	137
Edible matter only	19·2	1·5	2·0	1,009	87·1	6·8	9·1	458	
Edible matter less waste	11·3	0·9	1·5	609	51·3	4·1	6·8	276	156

Mackerel—									141
Including skin	11·8	7·0	—	1,135	53·5	31·7	—	515	
Excluding skin	11·0	6·2	—	1,028	49·9	28·1	—	466	
Mullet, Grey—									145
Including skin	16·4	3·4	—	989	74·4	15·4	—	449	
Excluding skin	14·1	2·8	—	838	64·0	12·7	—	380	
Mullet, Red—									144
Including skin	12·8	4·1	—	906	58·1	18·6	—	411	
Excluding skin	11·6	3·1	—	764	52·6	14·2	—	347	
Mussels—									
Flesh only	10·3	0·8	2·6	603	46·7	3·6	11·8	274	137
All contents less shell...	2·9	0·2	0·8	170	13·2	0·9	3·6	77	155
Oysters—									
Flesh only	8·9	1·0	8·7	815	40·4	4·5	39·5	370	137
All contents less shell...	1·0	0·1	0·9	87	4·5	0·4	4·1	40	154
Perch—									154
Including skin	12·6	0·9	—	600	57·2	4·1	—	272	
Excluding skin	9·9	0·9	—	490	44·9	4·1	—	222	
Plaice—									151
Including skin	12·9	3·0	—	808	58·5	13·6	—	367	
Excluding skin	7·7	0·7	—	381	34·9	3·2	—	173	
Pout whiting—									148
Including skin	10·3	0·6	—	478	46·7	2·7	—	217	
Excluding skin	10·2	0·3	—	446	46·3	1·4	—	202	
Prawns—									
Flesh only	22·8	1·3	—	1,056	103·4	5·9	—	479	137
Edible matter less waste	10·5	0·6	—	486	47·6	2·7	—	221	156
Saithe section—									147
Including skin	15·8	0·3	—	676	71·7	1·4	—	307	
Excluding skin	14·5	0·3	—	622	65·8	1·4	—	282	

Summary of Analyses for Army Use and Index—*continued.*

—	Per cent.			Energy Value per kilo.	Per lb.			Energy Value per lb.	Index Page.
	Protein.	Fat.	Carbo-hydrate.		Protein.	Fat.	Carbo-hydrate.		
Fish—continued—	Gm.	Gm.	Gm.	Calories.	Gm.	Gm.	Gm.	Calories.	
Salmon section—									143
Including skin	16·3	12·9	—	1,868	73·9	58·5	—	847	
Excluding skin	14·7	12·5	—	1,765	66·7	56·7	—	801	
Scallops—									
Edible matter only	17·5	0·5	1·7	834	79·4	2·3	7·7	378	137
Edible matter less shell and internal waste	3·1	0·1	0·3	149	14·2	0·4	1·4	68	155
Shrimps—									
Flesh only	23·2	0·9	1·4	1,092	105·2	4·1	6·4	495	137
Edible matter less waste	10·9	0·4	0·7	513	49·4	1·8	3·2	233	156
Smelts—									
Including skin	11·3	1·6	—	612	51·3	7·3	—	278	142
Sole—									152
Including skin	15·2	1·5	—	763	69·0	6·8	—	346	
Excluding skin	13·0	1·3	—	654	59·0	5·9	—	297	
Sole, Lemon—									151
Including skin	14·3	0·7	—	551	64·9	3·2	—	250	
Excluding skin	11·5	0·3	—	499	52·2	1·4	—	226	
Sprats, fresh—									141
Including skin	12·6	10·7	—	1,512	57·2	48·3	—	686	
Sprats, smoked—									141
Including skin	21·2	14·9	—	2,255	96·2	67·6	—	1,023	

Sturgeon section—									143
Including skin and soft bone ...	18·3	4·8	—	1,197	83·0	21·8	—	543	
Excluding skin	16·6	4·6	—	1,108	75·3	20·9	—	503	
Excluding soft bone	17·4	4·5	—	1,132	78·9	20·4	—	514	
Flesh only	17·8	4·9	—	1,186	80·7	22·2	—	538	131
Trout, brook—									154
Including skin	15·3	1·0	—	720	69·4	4·5	—	327	
Excluding skin	12·8	0·8	—	599	58·1	3·6	—	272	
Turbot—									153
Including skin	11·1	1·5	—	595	50·3	6·8	—	270	
Excluding skin	8·8	1·3	—	482	39·9	5·9	—	219	
Whelks—									
Flesh only	17·5	0·5	2·1	850	79·4	2·3	9·5	386	137
Flesh less shell and waste	7·4	0·2	0·9	359	33·6	0·9	4·1	163	155
Whitebait—									
Including skin	9·2	1·9	—	554	41·7	8·6	—	251	141
Whole fish with bone, etc.	13·1	3·1	—	825	59·4	14·1	—	374	131
Whiting—									
Including skin	11·3	0·1	—	473	51·3	0·4	—	215	145
Winkles—									
Flesh only	18·0	2·1	4·8	1,130	81·7	9·5	21·8	513	137
Flesh less shell and waste	4·0	0·5	1·1	256	18·1	2·3	5·0	116	155
Witches—									153
Including skin	13·0	0·4	—	570	59·0	1·8	—	259	
Excluding skin	10·9	0·3	—	475	49·4	1·4	—	216	
Flour	10·1	1·6	75·5	3,659	45·8	7·3	342·5	1,660	189
Fruits, Dried—									209–210
Apple rings...	0·9	0·6	58·7	2,499	4·1	2·7	266·3	1,134	
Apricots	5·5	0·3	49·6	2,287	25·0	1·4	225·0	1,037	
Bananas	2·5	0·2	70·0	2,991	11·3	0·9	317·5	1,357	
Currants	1·7	0·3	42·0	1,820	7·7	1·4	190·5	826	

SUMMARY OF ANALYSES FOR ARMY USE AND INDEX—*continued.*

—	Per cent.			Energy Value per kilo.	Per lb.			Energy Value per lb.	Index Page.
	Protein.	Fat.	Carbo-hydrate.		Protein.	Fat.	Carbo-hydrate.		
	Gm.	Gm.	Gm.	Calories.	Gm.	Gm.	Gm.	Calories.	
Fruits, Dried—continued—									209–210
Dates (1)	1·6	0·1	69·7	2,933	7·3	0·4	316·2	1,330	
,, less 15 per cent. for stone... ...	1·4	0·1	59·2	2,494	6·3	0·4	268·5	1,131	
,, (2)	1·6	0·2	66·8	2,823	7·3	0·9	303·0	1,281	
,, less 11 per cent. for stone ...	1·4	0·2	59·4	2,511	6·3	0·9	269·4	1,139	
Figs	2·0	0·5	56·5	2,455	9·1	2·3	256·3	1,109	
Peel, candied	0·3	0·1	66·8	2,760	1·4	0·4	303·0	1,252	
Prunes	3·0	0·3	40·4	1,807	13·6	1·4	193·2	820	
,, less 16·2 per cent. for stone ...	2·5	0·2	33·9	1,511	11·3	0·9	153·8	685	
Raisins	2·2	0·3	61·2	2,627	10·0	1·4	277·6	1,192	
Sultanas	1·7	0·3	64·9	2,759	7·7	1·4	294·4	1,252	
Fruits, Fresh (Mean Figures)—									196–208
Apples—									
Edible part	0·3	0·2	10·8	471	1·3	0·9	49·0	214	201
,, less 9·2 per cent. waste ...	0·3	0·2	9·8	432	1·3	0·9	44·4	196	205
Bananas—									
Edible part	1·2	0·1	24·9	1,077	5·4	0·4	112·9	489	201
,, less 43·3 per cent. waste	0·6	0·1	14·1	614	2·7	0·4	64·0	279	205
Blackberries, edible part, 100 per cent....	1·3	0·2	7·0	358	5·9	0·9	31·7	162	201

Cherries—									
Edible part	0·9	0·1	12·8	571	4·1	0·4	58·1	259	202
,, less 12·5 per cent. waste	0·8	0·1	11·2	501	3·6	0·4	50·8	227	205
Currants—									
Edible part	1·2	0·1	6·7	338	5·4	0·4	30·4	153	202
,, less 4·5 per cent. waste ...	1·2	0·1	6·4	322	5·4	0·4	29·0	146	206
Damsons—									
Edible part	0·4	0·2	7·8	355	1·8	0·9	35·4	161	202
,, less 8·3 per cent. waste ...	0·4	0·2	7·1	326	1·8	0·9	32·2	148	206
Figs, English—									
Edible part	0·8	0·1	10·9	489	3·6	0·4	49·4	222	202
,, less 19·6 per cent. waste	0·6	0·1	8·8	395	2·7	0·4	39·9	179	206
Gooseberries—									
Edible part	0·7	0·1	6·0	282	3·2	0·4	27·2	128	202
,, less ·3 per cent. waste ...	0·7	0·1	6·0	282	3·2	0·4	27·2	128	206
Grapes—									
Edible part	0·6	0·1	13·9	604	2·7	0·4	63·0	274	203
,, less 5·1 per cent. waste ...	0·6	0·1	13·2	575	2·7	0·4	59·9	261	206
Grape Fruit—									
Edible part	0·6	0·1	5·7	268	2·7	0·4	25·8	122	203
,, less 30 per cent. waste ...	0·4	0·1	4·0	190	1·8	0·4	18·1	86	207
Greengages—									
Edible part	0·7	0·2	10·8	490	3·2	0·9	49·0	222	203
,, less 5·5 per cent. waste ...	0·7	0·2	10·2	466	3·2	0·9	46·3	211	207
Lemons—									
Edible part	0·5	0·5	3·1	194	2·3	2·3	14·1	88	203
,, less 32·1 per cent. waste	0·2	0·2	1·0	68	0·9	0·9	4·5	31	207
Melons—									
Edible part	0·5	0·1	4·6	214	2·3	0·4	20·9	97	203
,, less 44·7 per cent. ...	0·3	0·0	2·6	119	1·4	0·0	11·8	54	207
Mulberries, edible part, 100 per cent. ...	1·5	0·4	7·8	419	6·8	1·8	35·4	190	203

SUMMARY OF ANALYSES FOR ARMY USE AND INDEX—*continued.*

—	Per cent.			Energy Value per kilo.	Per lb.			Energy Value per lb.	Index Page.
	Protein.	Fat.	Carbo-hydrate.		Protein.	Fat.	Carbo-hydrate.		
	Gm.	Gm.	Gm.	Calories.	Gm.	Gm.	Gm.	Calories.	
Fruits, Fresh—continued—									
Nectarines—									196–208
Edible part	0·8	0·1	9·0	411	3·6	0·4	40·8	186	203
,, less 5·3 per cent. waste ...	0·8	0·1	8·5	391	3·6	0·4	38·6	177	207
Oranges—									
Edible part	0·8	0·1	8·8	403	3·6	0·4	39·9	182	203
,, less 25·1 per cent. waste	0·6	0·1	6·6	303	2·7	0·4	29·9	137	207
Peaches—									
Edible part	0·8	0·1	4·7	235	3·6	0·4	21·3	107	204
,, less 7·0 per cent. waste ...	0·7	0·1	4·4	218	3·2	0·4	20·0	99	207
Pears—									
Edible part	0·3	0·1	8·4	366	1·4	0·4	38·1	166	204
,, less 12·3 per cent. waste	0·3	0·1	7·4	324	1·4	0·4	33·6	147	207
Pineapple—									
Edible part	0·5	0·0	11·1	476	2·3	0·0	50·3	216	204
,, less 32·7 per cent. waste	0·3	0·0	7·5	320	1·4	0·0	34·0	145	207
Plums—									
Edible part	0·5	0·3	8·2	377	2·3	1·4	37·2	171	204
,, less 5·1 per cent. waste ...	0·5	0·3	7·8	362	2·3	1·4	35·4	164	208
Pumpkin section—									
Edible part	0·4	0·0	2·8	131	1·8	0·0	12·7	59	204
,, less 33·5 per cent. waste	0·3	0·0	1·9	90	1·4	0·0	8·6	41	208

Raspberries—									
Edible part	1·2	0·1	6·6	329	5·4	0·4	29·9	149	204
,, less 8·5 per cent. waste	1·1	0·1	6·0	300	5·0	0·4	27·2	136	208
Strawberries—									
Edible part	0·7	0·1	8·2	372	3·2	0·4	37·2	169	204
,, less 5·0 per cent waste	0·7	0·1	7·9	358	3·2	0·4	35·8	162	208
Whortleberries, edible part, 100 per cent.	0·7	0·2	12·3	552	3·2	0·9	55·8	250	204
Game, see under Poultry.									72
Gammon, edible parts	15·1	21·3	—	2,600	68·5	96·6	—	1,179	
,, as purchased	16·9	22·7	—	2,804	76·7	103·0	—	1,272	73
Ham, edible parts	11·5	41·0	—	4,285	52·2	186·0	—	1,944	
,, as purchased	12·4	42·2	—	4,433	56·2	191·4	—	2,011	
Honey	0·4	—	71·4	2,944	1·8	—	323·9	1,290	212
Jam, mean of 12	0·3	—	69·4	2,858	1·4	—	314·8	1,296	
Lard	—	100	—	9,300	—	453·6	—	4,219	87
Legumes, dried, *see* Pulses.									
Margarine, mean of 7	0·2	84·8	—	7,890	0·9	384·7	—	3,579	87
Meat—									
Beef—									14–31
Forequarter	18·8	18·4	—	2,482	85·3	83·5	—	1,126	29
Hindquarter	16·6	29·9	—	3,461	75·3	135·6	—	1,570	29
Half carcase	17·8	23·7	—	2,934	80·7	107·5	—	1,331	29
,, less 17½ per cent. for bone	14·7	19·5	—	2,416	66·7	88·5	—	1,096	29
Head, cheek	14·6	17·7	—	2,245	66·2	80·3	—	1,018	28
,, brain	11·0	10·0	—	1,381	49·9	45·4	—	626	20
Whole head	6·5	7·7	—	983	29·5	34·9	—	446	28
Tongue, whole	11·9	38·6	—	4,078	54·0	175·1	—	1,850	28
,, proper	15·6	19·2	—	2,425	70·7	87·1	—	1,100	20
Tail	15·4	25·1	—	2,966	69·9	113·9	—	1,345	28
Lamb—									42, 53–56
Whole carcase	14·3	31·5	—	3,516	64·9	142·9	—	1,595	56

SUMMARY OF ANALYSES FOR ARMY USE AND INDEX—*continued.*

—	Per cent.			Energy Value per kilo.	Per lb.			Energy Value per lb.	Index Page.
	Protein.	Fat.	Carbo-hydrate.		Protein.	Fat.	Carbo-hydrate.		
	Gm.	Gm.	Gm.	Calories.	Gm.	Gm.	Gm.	Calories.	
Meat—continued—									
Mutton—									42–51
Whole carcase	12·4	41·5	—	4,368	56·2	188·2	—	1,981	49
,, less 10 per cent. for more bone	11·1	37·3	—	3,924	50·4	169·2	—	1,780	49
Sheep's head	7·1	11·4	—	1,351	32·2	51·7	—	613	49
Pork—									57–66
All flesh, bone allowed for	14·9	24·5	—	2,889	67·6	111·1	—	1,310	65
Whole head	14·1	27·0	—	3,089	64·0	122·5	—	1,401	63
Trotter	14·0	11·0	—	1,597	63·5	49·9	—	724	63
Whole carcase	14·8	24·5	—	2,885	67·1	111·1	—	1,309	65
Veal—									32–41
Forequarter	19·6	4·1	—	1,185	88·9	18·6	—	538	34
,, less 16 per cent. bone ...	16·4	3·4	—	989	74·4	15·4	—	449	36
Hindquarter	20·4	2·7	—	1,088	92·5	12·3	—	494	34
,, less 14 per cent. bone ...	17·5	2·3	—	931	79·4	10·4	—	422	
Loin	19·7	13·3	—	2,045	89·4	60·3	—	928	34
,, less 12·5 per cent. bone	17·2	11·6	—	1,784	78·0	52·6	—	809	36
Carcase, bone allowed for	17·9	5·0	—	1,199	81·2	22·7	—	544	36
Whole head	8·4	4·0	—	716	38·1	18·1	—	325	37
Foot	11·0	8·3	—	1,223	49·9	37·7	—	555	37
Tail	19·5	9·0	—	1,637	88·5	40·8	—	743	37

Milk—									82–83
Dried, Skim	26·5	12·1	45·0	4,053	120·2	54·9	204·1	1,838	
,, Whole	24·5	24·2	35·1	4,688	110·1	109·8	159·2	2,126	
Fresh	3·3	3·6	4·8	668	15·0	16·3	21·8	303	
,, per pint = 20 oz. or 1¼ lb. ...	—	—	—	—	18·7	20·4	27·2	378	
Nuts—									
Edible part—									213–215
Almond—									
Jordan	22·0	52·2	15·5	6,392	99·8	236·8	70·3	2,899	
Valencia	18·6	56·4	15·2	6,631	84·4	255·8	68·9	3,008	
In shell	15·7	57·2	17·4	6,677	71·2	259·5	78·9	3,029	
Mean	18·8	55·3	16·0	6,567	85·3	250·8	72·6	2,979	
Brazil	13·2	70·4	8·1	7,421	59·9	319·3	36·7	3,366	
Chestnut	3·0	1·9	48·2	2,276	13·6	8·6	218·6	1,032	
Coconut—									
Flesh	4·2	48·5	7·7	4,998	19·0	220·0	34·9	2,267	
Milk	0·2	—	5·2	221	0·9	—	23·6	100	
Cob or filbert	14·3	51·6	17·8	6,115	64·9	234·1	80·7	2,774	
Hazel	13·2	63·2	14·3	7,005	59·9	286·7	64·9	3,178	
Peanut	20·1	47·6	22·1	6,157	91·2	215·9	100·2	2,793	
Pine kernels	31·4	48·0	10·6	6,186	142·4	217·7	48·1	2,806	
Walnuts—									
Dried	13·6	66·4	14·0	7,307	61·7	301·2	63·5	3,314	
,, in shell	20·7	58·9	13·8	6,892	93·9	267·2	62·6	3,126	
Fresh	15·8	58·8	11·1	6,571	71·7	266·7	50·4	2,981	
Mean, excluding chestnut and coconut milk	16·5	56·9	13·6	6,526	74·8	258·1	61·7	2,960	

Summary of Analyses for Army Use and Index—*continued*.

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	Protein.	Fat.	Carbo-hydrate.		Protein.	Fat.	Carbo-hydrate.		
	Gm.	Gm.	Gm.	Calories.	Gm.	Gm.	Gm.	Calories.	
Nuts, whole, as purchased—									213–215
Almond in shell	4·7	17·0	5·2	1,987	21·3	77·1	23·6	901	
Brazil	7·0	37·4	4·3	3,942	31·7	169·7	19·5	1,788	
Chestnut	2·6	1·6	41·2	1,945	11·8	7·3	186·9	882	
Coconut—									
Flesh	2·1	24·9	3·9	2,562	9·5	112·9	17·7	1,162	
Milk	0·0	—	1·0	41	0·0	—	4·5	19	
Whole interior	2·1	24·9	4·9	2,603	9·5	112·9	22·2	1,181	
Cob or filbert	5·8	20·9	7·2	2,477	26·3	94·8	32·7	1,124	
Peanut	13·9	33·0	15·3	4,266	63·0	149·7	69·4	1,935	
Walnuts—									
Dried, in shell	9·3	26·5	6·2	3,100	42·2	120·2	28·1	1,406	
Fresh, in shell	6·4	23·9	4·5	2,670	29·0	108·4	20·4	1,211	
Offal—									
Diaphragm, or back vein or thick skirt—									
Calf	17·7	6·6	—	1,340	80·3	29·9	—	608	35
Ox...	18·5	19·7	—	2,591	83·9	89·4	—	1,175	21
Diaphragm, or thin skirt—									
Calf	17·5	5·5	—	1,229	79·4	25·0	—	558	35
Ox	17·9	25·3	—	3,087	81·2	114·8	—	1,400	21

Gullet—									
Calf	15·9	3·1	—	940	72·1	14·1	—	426	35
Ox	18·0	6·8	—	1,370	81·6	30·8	—	621	21
Pig	16·4	17·1	—	2,263	74·4	77·6	—	1,027	60
Sheep	18·2	7·0	—	1,397	82·6	31·8	—	634	45
Heart—									
Calf	14·1	4·6	2·0	1,088	64·0	20·9	9·1	494	35
Ox, lean...	19·7	2·9	0·9	1,114	89·4	13·1	4·1	505	21
,, whole	13·2	40·8	0·5	4,360	59·9	185·1	2·3	1,978	26
Pig	16·2	6·4	1·1	1,305	73·5	29·0	5·0	592	60
Sheep	16·6	1·6	2·9	948	75·3	7·3	13·2	430	45
Kidney—									
Calf	16·8	2·9	—	959	76·2	13·2	—	435	35
Ox	18·1	2·6	—	984	82·1	11·8	—	446	21
Pig	17·2	3·2	—	1,003	78·0	14·5	—	455	60
Sheep	17·1	3·5	—	1,027	77·6	15·9	—	466	45
Liver—									
Calf	14·6	0·9	10·5	1,113	66·2	4·1	47·6	505	35
Ox	19·9	3·2	4·4	1,294	90·3	14·5	20·0	587	21
Pig	17·1	2·7	8·5	1,301	77·6	12·3	38·6	590	60
Sheep	21·5	3·0	2·5	1,263	97·5	13·6	11·3	573	45
Lung—									
Calf	16·5	2·5	—	909	74·8	11·3	—	412	35
Ox	17·8	1·7	—	888	80·7	7·7	—	403	21
Pig	17·7	2·4	—	949	80·3	10·9	—	431	60
Sheep	18·7	1·4	—	897	84·8	6·4	—	407	45
Spleen—									
Calf	20·3	1·8	—	1,000	92·1	8·2	—	454	35
Ox	18·1	2·3	—	956	82·1	10·4	—	434	21
Pig	17·0	5·8	—	1,236	77·1	26·3	—	561	60
Sheep	18·8	3·9	—	1,140	85·3	17·7	—	517	45

Summary of Analyses for Army Use and Index—*continued.*

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	Gm.	Gm.	Gm.	Calories.	Gm.	Gm.	Gm.	Calories.	
Offal—continued—									
Suet—									
Calf	5·1	79·2	—	7,575	23·1	359·3	—	3,436	35
Ox	1·2	93·3	—	8,726	5·4	423·2	—	3,958	21
Sheep	1·3	96·6	—	9,037	5·9	438·2	—	4,099	45
Trachea—									
Calf	16·8	10·8	—	1,693	76·2	49·0	—	768	35
Ox	21·6	9·0	—	1,723	98·0	40·8	—	782	21
Pig	15·7	23·3	—	2,811	71·2	105·7	—	1,275	60
Sheep	17·5	26·1	—	3,145	79·4	118·4	—	1,427	45
Tripe—									
Calf—									
Rumen	13·7	1·8	—	731	62·1	8·2	—	332	38
Omasum	4·0	0·4	—	201	18·1	1·8	—	91	39
Abomasum	9·0	3·7	—	713	40·8	16·8	—	323	39
Rectum	10·5	2·4	—	654	47·6	10·9	—	297	39
Ox—									
Rumen	15·8	2·1	—	843	71·7	9·5	—	382	27
Omasum	7·7	0·3	—	344	34·9	1·4	—	156	21
Abomasum	5·0	1·0	—	298	22·7	4·5	—	135	27
Rectum	6·8	15·4	—	1,711	30·8	69·8	—	776	27
Heartbread or kernel—									
Calf	18·3	4·9	—	1,206	83·0	22·2	—	547	35

Ox, lean only	11·0	35·5	—	3,753	49·9	161·0	—	1,702	21
,, whole	7·8	57·3	—	5,649	35·4	259·9	—	2,562	26
Pig	8·3	40·6	—	4,116	37·7	184·2	—	1,867	60
Sheep	13·4	21·3	—	2,530	60·8	96·6	—	1,148	45
Pancreas or collop—									
Calf	22·1	6·6	—	1,520	100·3	29·9	—	690	35
Ox, lean	17·6	7·3	—	1,401	79·8	33·1	—	636	21
,, whole	12·7	22·6	—	2,623	57·6	102·5	—	1,190	26
Pig	13·1	29·3	—	3,262	59·4	132·9	—	1,480	60
Sheep	19·9	5·5	—	1,327	90·3	25·0	—	602	45
Thymus...									
Calf	20·5	1·8	—	1,008	93·0	8·2	—	457	35
Ox	17·0	11·0	—	1,720	77·1	49·9	—	780	21
Pig	15·2	8·5	—	1,414	69·0	38·6	—	641	60
Sheep	16·6	14·7	—	2,046	75·3	66·7	—	928	45
Poultry and game—									88–**124**
Chicken, frozen, 1918, whole	12·5	3·0	0·1	793	56·7	13·6	0·4	360	96
Duck ,,	9·8	37·2	0·1	3,866	44·4	168·7	0·4	1,754	99
Goose ,,	11·0	22·2	0·2	2,524	49·9	100·7	0·9	1,145	102
Pigeon ,,	12·5	5·1	0·1	991	56·7	23·1	0·4	449	104
Rabbit, frozen, 1918, ,, without skin	12·5	4·5	0·1	935	56·7	20·4	0·4	424	121
Rabbit, tinned ,,	19·5	0·9	—	883	88·4	4·1	—	401	121
Turkey ,,	15·6	5·7	0·0	1,170	70·8	25·9	0·0	531	107
Grouse ,,	12·9	1·3	0·1	654	58·5	5·9	0·4	297	109
Hare (Scotch) ,,	11·0	1·3	0·1	576	49·9	5·9	0·4	261	119
Partridge ,,	13·8	3·4	0·1	886	62·6	15·4	0·4	402	111
Pheasant ,,	16·2	9·6	0·1	1,561	73·5	43·6	0·4	708	114
Wild duck ,,	13·7	9·6	0·1	1,459	62·1	43·6	0·4	662	117
Venison—									124
Rib	16·8	27·6	—	3,256	76·2	125·2	—	1,477	
Shoulder	16·6	12·3	—	1,825	75·3	55·8	—	828	

Summary of Analyses for Army Use and Index—*continued.*

—	Per cent.			Energy Value per kilo.	Per lb.			Energy Value per lb.	Index Page.
	Protein.	Fat.	Carbo-hydrate.		Protein.	Fat.	Carbo-hydrate.		
Pulses—	Gm.	Gm.	Gm.	Calories.	Gm.	Gm.	Gm.	Calories.	184–185
Bean—									
Butter	18·6	0·7	62·2	3,378	84·4	3·2	282·1	1,532	
Haricot, small	17·8	0·5	64·5	3,421	80·7	2·3	292·6	1,552	
,, large	16·7	1·7	61·3	3,356	75·7	7·7	278·1	1,522	
Brown and white	19·2	1·3	61·7	3,438	87·1	5·9	279·9	1,560	
Light brown	19·2	1·0	63·2	3,471	87·1	4·5	286·7	1,574	
Dark brown	18·9	1·0	62·5	3,430	85·7	4·5	283·5	1,556	
Scarlet runner	15·2	2·1	62·8	3,393	68·9	9·5	284·9	1,539	
French dwarf	20·6	1·1	60·0	3,407	93·4	5·0	272·2	1,545	
Black	16·4	1·4	64·0	3,427	74·4	6·3	290·3	1,555	
Broad	23·9	1·3	54·5	3,335	108·4	5·9	247·2	1,513	
Mean	—	—	—	3,406	—	—	—	1,545	
Soya	33·7	18·3	32·5	4,416	152·9	83·0	147·4	2,003	
Lentil—									
Flour	21·4	0·9	63·5	3,565	97·1	4·1	288·0	1,617	
Whole brown	22·2	0·5	59·7	3,404	100·7	2·3	270·6	1,544	
Split red	20·1	0·4	63·9	3,481	91·2	1·8	289·8	1,579	
"Russian"	21·4	0·6	63·0	3,516	97·1	2·7	285·8	1,595	
Mean	—	—	—	3,492	—	—	—	1,584	

Pea—									
Whole green	20·4	0·6	57·1	3,233	92·5	2·7	259·0	1,467	
Split, green	22·1	0·8	62·4	3,539	100·2	3·6	283·0	1,605	
,, yellow	20·3	0·7	63·0	3,480	92·1	3·2	285·8	1,579	
Flour	21·9	1·4	64·2	3,660	99·3	6·3	291·2	1,660	
Mean	—	—	—	3,478	—	—	—	1,578	
Sausage	11·2	17·7	15·2	2,730	50·8	80·3	68·9	1,238	74
Sugar—									218
Brown	—	—	98·0	4,018	—	—	444·5	1,823	
White	—	—	100·0	4,100	—	—	453·6	1,860	
Syrup, Golden	0·3	—	76·4	3,145	1·4	—	346·6	1,427	212
Treacle	1·6	—	59·9	2,522	7·3	—	271·7	1,144	212
Vegetables, fresh—									157–183
Artichoke—									
Jerusalem, whole	1·9	0·03	17·4	794	8·6	0·14	78·9	360	163
Green—									
"Fond"	3·5	0·10	7·3	452	15·9	0·40	33·1	205	165
Edible part leaf	2·0	—	14·2	664	9·1	0·00	64·4	301	
"Fond," less leaf	0·5	0·01	1·0	62	2·3	0·04	4·5	28	177
Edible part leaf, less other leaf ...	0·4	—	2·6	123	1·8	0·00	11·8	56	
Whole	2·5	0·01	8·6	456	11·3	0·04	39·0	207	
Asparagus—									
Edible part	3·1	0·05	4·25	306	14·1	0·23	19·3	139	167
Stalk	1·8	0·09	4·81	279	8·2	0·40	21·8	127	
Edible part less stalk	1·3	0·02	1·8	129	5·9	0·09	8·2	59	179
Whole	2·3	0·07	4·5	285	10·4	0·32	20·4	129	

SUMMARY OF ANALYSES FOR ARMY USE AND INDEX—*continued.*

—	Per cent.			Energy Value per kilo.	Per lb.			Energy Value per lb.	Index Page.
	Protein.	Fat.	Carbo-hydrate.		Protein.	Fat.	Carbo-hydrate.		
	Gm.	Gm.	Gm.	Calories.	Gm.	Gm.	Gm.	Calories.	
Vegetables, fresh—continued—									157–183
Aubergine or egg plant, whole	0·6	0·10	4·3	210	2·7	0·40	19·5	95	165
Batavia—									
Edible inside leaves	1·4	0·10	3·3	202	6·4	0·45	15·0	92	167
Outside leaves	0·8	0·10	3·7	194	3·6	0·45	16·8	88	
Edible inside leaves, less outside and stalk	0·8	0·05	1·8	111	3·6	0·23	8·2	50	180
Whole	1·1	0·09	3·4	193	5·0	0·40	15·4	88	
Beans—									
Broad—									
Raw edible part	6·9	0·30	19·0	1,090	31·3	1·40	86·2	494	170
Cooked edible part	6·1	0·20	14·1	847	27·7	0·90	64·0	384	
Raw, less waste	2·5	0·10	6·8	391	11·2	0·50	30·9	177	171
Whole as purchased	3·5	0·20	13·5	716	15·9	0·90	61·2	325	
French—									
Raw, as eaten	1·9	0·10	4·8	284	8·6	0·40	21·8	129	162
,, less waste	1·7	0·10	4·4	259	7·8	0·40	19·9	118	171
Scarlet runner—									
Edible part	1·3	0·10	3·9	223	5·9	0·40	17·7	101	162
,, less waste	1·2	0·10	3·6	206	5·4	0·40	16·2	93	171

White wax or butter—									
Edible part	2·1	0·10	5·6	325	9·5	0·40	25·4	147	162
,, less waste	2·0	0·10	5·4	303	9·1	0·40	24·5	137	171
Beetroot—									
Edible root	1·2	0·10	6·2	313	5·4	0·45	28·1	142	163
,, leaf, etc.	0·7	0·06	3·8	190	3·2	0·27	17·2	86	173
Whole plant	1·4	0·13	5·5	295	6·3	0·59	24·9	134	
Brussels sprouts—									
Edible inside leaves	3·6	0·20	5·7	400	16·3	0·90	25·9	181	169
Outside leaves	3·4	0·20	6·2	412	15·4	0·90	28·1	187	
Inside leaves, less outside	2·8	0·15	4·4	309	12·7	0·70	20·0	140	182
Whole	3·6	0·20	5·8	404	16·3	0·90	26·3	183	
Cabbage—									
Edible inside leaves (1)	1·4	0·10	4·5	251	6·4	0·45	20·4	114	169
,, (2)	1·5	0·10	8·1	403	6·8	0·45	36·7	183	
Mean	1·45	0·10	6·3	227	6·6	0·45	28·6	149	
Outside leaves (2)	1·1	0·20	9·3	445	5·0	0·90	42·2	202	169
Inside, less outside (2)	0·7	0·05	3·9	193	3·2	0·23	17·7	88	182
Whole (2)	1·3	0·15	8·7	424	5·9	0·70	39·5	192	
Red—									
Edible inside leaves	2·2	0·10	6·5	366	10·0	0·45	29·5	166	169
Outside leaves	2·8	0·20	8·0	461	12·7	0·90	36·3	209	
Inside, less outside	1·3	0·06	3·7	211	5·9	0·27	16·8	96	182
Whole	2·5	0·15	7·1	408	11·3	0·7	32·2	185	
Savoy—									
Edible inside leaves	2·6	0·10	5·1	325	11·8	0·45	23·1	147	169
Outside leaves	1·8	0·20	6·1	343	8·2	0·90	27·7	156	
Inside, less outside	1·5	0·06	2·9	186	6·8	0·27	13·2	84	183
Whole	2·3	0·15	5·5	334	10·4	0·70	24·9	152	

SUMMARY OF ANALYSES FOR ARMY USE AND INDEX—*continued.*

—	Per cent.			Energy Value per kilo.	Per lb.			Energy Value per lb.	Index Page.
	Protein.	Fat.	Carbohydrate.		Protein.	Fat.	Carbohydrate.		
	Gm.	Gm.	Gm.	Calories.	Gm.	Gm.	Gm.	Calories.	
Vegetables, fresh—continued—									157–183
Carrot—									
Edible part (1)	0·9	0·10	8·0	374	4·1	0·45	36·3	170	163
„ (2)	1·5	0·10	11·2	530	6·8	0·45	50·8	240	
Mean	1·2	0·10	9·6	452	5·4	0·45	43·6	205	
Leaf	2·4	0·30	12·1	622	10·9	1·36	54·9	282	163
Whole plant	1·7	0·14	11·4	550	7·7	0·60	51·7	250	173
Cauliflower—									
Flower and edible leaf	1·9	0·20	5·9	338	8·6	0·90	26·8	153	166
Outside leaf and stalk	1·1	0·10	6·7	329	5·0	0·40	30·4	149	
Flower and edible leaf, less stalk, etc.	1·0	0·10	3·1	177	4·5	0·40	14·1	80	178
Whole	1·5	0·15	6·3	334	6·8	0·70	28·6	152	
Celery—									
Edible part stalk	0·6	0·10	3·8	190	2·8	0·45	17·2	86	167
Leaf	2·0	0·10	5·7	325	9·1	0·45	25·9	147	
Edible part stalk, less leaf, etc. ...	0·5	0·09	3·4	168	2·3	0·40	15·4	76	179
Whole	0·7	0·10	4·1	206	3·2	0·45	18·6	93	
Corn salad—									
Edible leaf	1·8	0·20	3·0	215	8·2	0·90	13·6	98	167
„ less roots	1·7	0·20	2·9	207	7·7	0·90	13·1	94	181

Cress, whole	2·1	0·40	1·8	197	9·5	1·80	8·2	89	167
Cucumber—									
Edible part	0·6	0·07	2·0	113	2·7	0·31	9·1	51	166
Skin	0·8	0·10	2·5	145	3·6	0·45	11·3	66	
Edible part, less skin	0·5	0·07	1·6	93	2·3	0·32	7·3	42	178
Whole	0·6	0·10	2·0	116	2·7	0·40	9·1	53	
Curly kale—									
Edible part leaf...	3·9	0·40	8·8	558	17·7	1·80	39·9	253	169
,, less stalk, etc.	2·7	0·30	6·1	389	12·2	1·40	27·7	176	183
Endive—									
Inside leaf, edible part	1·7	0·10	2·9	198	7·7	0·45	13·1	90	168
Outside leaf	1·4	0·10	2·6	173	6·4	0·45	11·8	79	
Inside leaf, less outside	1·3	0·07	2·1	146	5·9	0·32	9·5	66	181
Whole	1·7	0·10	2·8	194	7·7	0·45	12·7	88	
Garlic—									
Edible part	4·7	0·10	29·0	1,391	21·3	0·40	131·5	631	165
,, less skin	4·3	0·09	26·6	1,275	19·5	0·40	120·7	578	176
Whole	4·5	0·15	30·4	1,445	20·4	0·70	137·9	656	
Kohlrabi—									
Edible part	2·2	0·03	4·5	277	10·0	0·14	20·4	126	163
,, less scrapings	1·7	0·02	3·4	211	7·7	0·09	15·4	96	173
Whole root	2·5	0·04	5·2	319	11·3	0·18	23·6	145	
,, plant	2·5	0·22	5·9	365	11·3	1·00	26·8	166	
Leek—									
Edible part	2·5	0·10	9·3	495	11·3	0·40	42·2	225	165
,, less leaf, rootlets ...	1·1	0·04	4·1	217	5·0	0·18	18·6	98	177
Whole plant	2·2	0·15	7·4	408	10·0	0·70	33·6	185	
Lettuce—									
Edible inside leaves	1·1	0·20	1·9	142	5·0	0·90	8·6	64	168
Outside leaves	0·7	0·20	2·3	142	3·2	0·90	10·4	64	
Edible inside, less outside leaves ...	0·7	0·13	1·2	90	3·2	0·59	5·4	41	181
Whole	1·0	0·20	2·0	142	4·5	0·90	9·1	64	

SUMMARY OF ANALYSES FOR ARMY USE AND INDEX—*continued.*

—	Per cent.			Energy Value per kilo.	Per lb.			Energy Value per lb.	Index Page.
	Protein.	Fat.	Carbo-hydrate.		Protein.	Fat.	Carbo-hydrate.		
	Gm.	Gm.	Gm.	Calories.	Gm.	Gm.	Gm.	Calories.	
Vegetables, fresh—continued—									157–183
Marrow—									
Green—									
Edible part	0·4	0·05	5·2	234	1·8	0·23	23·6	106	166
,, less seed part and skin ...	0·3	0·03	3·5	159	1·4	0·10	15·9	72	178
Whole	0·7	0·08	5·3	253	3·2	0·36	24·0	115	
Yellow—									
Edible part	0·2	0·06	2·2	104	0·9	0·27	10·0	47	166
,, less seed part and skin ...	0·1	0·03	1·2	56	0·45	0·10	5·4	25	179
Whole	0·5	0·10	2·9	149	2·3	0·40	13·2	68	
Mushroom—									
Flesh	4·5	0·20	2·0	285	20·4	0·90	9·1	129	167
Stalk	4·4	0·10	2·6	296	20·0	0·45	11·8	134	
Flesh and stalk, less skin	4·1	0·17	1·9	262	18·6	0·77	8·6	119	180
Whole	4·7	0·20	2·3	306	21·3	0·90	10·4	139	180
Mustard, whole (mean of 2)	1·3	0·30	1·8	155	5·9	1·40	8·2	70	168
Onions—									
English—									
Edible part	1·3	0·10	10·8	505	5·9	0·40	49·0	229	165
,, less skin	1·23	0·10	10·3	482	5·6	0·40	46·7	219	177
Whole	1·3	0·12	11·1	520	5·9	0·50	50·6	236	

Spanish—									
Edible part	0·6	0·04	4·1	196	2·7	0·2	18·6	89	165
,, less skin	0·59	0·04	4·0	192	2·7	0·2	18·1	87	177
Whole	0·6	0·06	4·6	219	2·7	0·3	20·9	99	
Parsley—									
Leaf	3·8	0·70	11·6	697	17·2	3·2	52·6	316	168
Stalk	1·4	0·30	11·8	569	6·4	1·4	53·5	258	
Leaf, less stalk	2·7	0·51	8·4	503	12·2	2·3	38·1	228	181
Whole	3·1	0·60	11·7	662	14·1	2·8	53·1	300	
Parsnip—									
Edible part, root	1·7	0·50	21·1	981	7·7	2·3	95·7	445	163
,, less scrapings	1·5	0·40	18·3	849	6·8	1·8	83·0	385	173
Whole root (mean of 2)	1·8	0·47	19·4	910	8·2	2·1	87·8	413	
,, plant	1·7	0·40	16·7	792	7·7	1·8	75·7	359	174
Peas—									
Green—									
Raw, edible part	5·4	0·50	15·2	891	24·5	2·3	68·9	404	170
Cooked, edible part...	4·6	0·60	13·3	790	20·9	2·7	60·3	358	
Raw, less waste	2·3	0·20	6·5	379	10·4	1·0	29·3	172	171
Whole, as purchased	3·3	0·20	10·3	576	15·0	1·0	46·7	261	
Potatoes—									
New—									
Raw—									
Tuber	1·6	0·02	21·0	928	7·3	0·1	95·2	421	163
Skin...	2·8	0·40	7·9	476	12·7	1·8	35·8	216	
Tuber, less skin	1·6	0·02	20·4	904	7·3	0·1	92·5	410	171
Whole	1·7	0·03	20·6	917	7·7	0·1	93·4	416	

SUMMARY OF ANALYSES FOR ARMY USE AND INDEX—*continued.*

—	Per cent.			Energy Value per kilo.	Per lb.			Energy Value per lb.	Index Page.
	Protein.	Fat.	Carbo-hydrate.		Protein.	Fat.	Carbo-hydrate.		
	Gm.	Gm.	Gm.	Calories.	Gm.	Gm.	Gm.	Calories.	
***Vegetables**, fresh*—continued—									157–183
Potatoes—*continued.*									
Old—									
Raw—									
Tuber	2·1	0·03	19·6	893	9·5	0·10	88·9	405	163
Skin...	2·9	0·30	11·1	602	13·1	1·40	50·3	273	
Tuber, less skin	1·9	0·03	18·1	823	8·6	0·10	82·1	373	172
Whole	2·1	0·05	19·0	870	9·5	0·20	86·2	395	
Mean, whole old and new ...	1·9	0·04	19·8	894	8·6	0·20	89·8	406	
Mean, tuber, less 5 per cent. for skin	1·8	0·04	18·8	849	8·2	0·20	85·3	386	
Mean, tuber only	1·85	0·02	20·3	910	8·4	0·10	92·0	413	
Radish—									
Edible part	0·6	0·04	3·26	162	2·7	0·18	14·8	74	164
,, ...	1·0	0·10	3·40	190	4·5	0·45	15·4	86	
Mean	0·8	0·07	3·33	176	3·6	0·32	15·1	80	

Edible part	0·2	0·01	0·9	46	0·9	0·04	4·1	21	174
,, less leaf	0·5	0·05	1·5	87	2·3	0·20	6·8	40	
Mean	0·35	0·03	1·2	67	1·6	0·12	5·4	30	
Whole plant	1·8	0·10	2·6	190	8·2	0·45	11·8	86	174
,,	1·9	0·31	2·8	221	8·6	1·41	12·7	100	
Mean	1·9	0·20	2·7	206	8·4	0·93	12·3	93	
Rhubarb—									
Stem, edible part	0·6	0·07	3·63	180	2·7	0·32	16·5	82	167
,, less leaf	0·5	0·06	3·0	149	2·3	0·27	13·6	68	179
Salsify—									
Edible part root	2·8	0·10	17·9	858	12·7	0·45	81·2	389	164
,, less scrapings	2·4	0·09	15·6	746	10·9	0·40	70·8	338	175
Whole root	2·7	0·25	17·2	839	12·2	1·13	78·0	381	
,, plant	2·6	0·45	12·8	673	11·8	2·04	58·1	305	
Scorzonera—									
Edible part root	3·9	0·20	19·9	994	17·7	0·91	90·3	451	164
,, less scrapings	3·1	0·16	15·9	794	14·1	0·73	72·1	360	175
Whole root	3·6	0·32	20·6	1,022	16·3	1·45	93·4	464	
Seakale—									
Edible part	1·5	0·03	3·77	219	6·8	0·14	17·1	99	167
,, less root	1·2	0·02	2·9	170	5·4	0·09	13·2	77	180
Whole	1·7	0·04	4·4	254	7·7	0·18	20·0	115	

Summary of Analyses for Army Use and Index—*continued.*

—	Per cent.			Energy Value per kilo.	Per lb.			Energy Value per lb.	Index Page.
	Protein.	Fat.	Carbo-hydrate.		Protein.	Fat.	Carbo-hydrate.		
	Gm.	Gm.	Gm.	Calories.	Gm.	Gm.	Gm.	Calories.	
Vegetables, fresh—continued—									157–183
Spinach—									
Whole, edible	1·8	0·20	2·9	211	8·2	0·90	13·1	96	169
Perpetual—									
Leaf	1·7	0·10	2·6	186	7·7	0·45	11·8	84	169
,, less stems	1·2	0·07	1·8	129	5·4	0·32	8·2	59	183
Whole	1·5	0·10	2·9	190	6·8	0·45	13·1	86	
Sprouting broccoli—									
Edible leaf	4·7	0·40	11·5	701	21·3	1·80	52·2	318	169
,, less stalk	4·1	0·35	10·0	611	18·6	1·60	45·4	277	183
Swede—									
Edible part root	1·0	0·10	8·1	382	4·5	0·45	36·7	173	164
Skin and rootlets	2·6	0·10	8·5	464	11·8	0·45	38·6	211	
Leaf	2·2	0·30	6·7	393	10·0	1·36	30·4	178	
Edible part, root less skin	0·8	0·08	6·8	319	3·6	0·36	30·8	145	175
Whole root	1·2	0·10	8·1	391	5·4	0·45	36·7	177	
,, plant	1·5	0·17	7·5	385	6·8	0·77	34·0	175	

Thousand heads—									
Edible leaf	4·5	0·40	10·4	648	20·4	1·80	47·2	294	169
Stems	2·7	0·10	9·4	505	12·2	0·45	42·6	229	
Edible part, less stem and stalk ...	2·5	0·22	5·9	365	11·3	1·00	26·8	166	183
Whole plant	3·5	0·26	9·3	549	15·9	1·20	42·2	249	
Tomatoes, whole	0·7	0·10	4·5	222	3·2	0·40	20·4	101	166
Turnip—									
Edible part root	1·2	0·10	4·4	239	5·4	0·45	20·0	108	164
Scrapings	2·5	0·10	4·6	300	11·3	0·45	20·9	136	
Leaves	2·4	0·20	4·8	314	10·8	0·90	21·8	142	
Edible part root, less scrapings ...	1·1	0·09	3·8	209	5·0	0·40	17·7	95	176
Whole root	1·4	0·10	4·4	247	6·3	0·45	20·0	112	
,, plant	1·7	0·14	4·6	271	7·7	0·60	20·9	123	
Watercress—									
Leaf part	1·4	0·40	4·2	267	6·4	1·80	19·1	121	168
Stem part	1·2	0·20	1·8	142	5·4	0·90	8·2	64	
Leaf, less stalk and stem	0·7	0·20	2·1	133	3·2	0·90	9·5	60	181
Whole	1·3	0·30	3·0	204	5·9	1·40	13·6	93	

APPENDIX.

ACCESSORY FOOD FACTORS OR VITAMINES.

The accessory food factors, or vitamines, are present in certain *fresh* foods. If these foods be suitable and varied they will in most cases be sufficient. Attention must be given to the nature of the food, otherwise the symptoms of the deficiency diseases, namely, scurvy, rickets, beri-beri and pellagra, may appear. These diseases can be cured by taking the proper diet in each case. The accessory food factors, or vitamines, serve to maintain health. The researches of recent years point to the need of a daily intake of each vitamine. The accessory food factors play such an important part in adequate nutrition that the following tables showing their distribution (selected and re-arranged), from the Report of the Medical Research Committee (1919), are appended. They serve to show at a glance the good and bad foods in these categories.

Common Foodstuffs containing No Accessory Food Factors.

Fats and Oils.	*Meats, etc.*	*Cereals, etc.*
Lard.	Tinned.	White wheaten flour.
Olive oil.	Fish, white.	Pure cornflour.
Cottonseed oil.	Cheese (skim milk).	Polished rice.
Coconut oil.	Meat extracts.	Pea flour, kilned.
Coconut butter.	Malt extracts.	Oatmeal, kilned.
Linseed oil.	Preserved lime juice.	Custard powders.
Margarine from veg. fats.	Beer, wine.	Egg substitutes.

Common Foodstuffs containing All Three Accessory Factors.

Foodstuff.	Fat soluble A or Anti-rachitic.	Water soluble B or Anti-neuritic.	Water soluble C or Anti-scorbutic.
Cabbage, fresh	++	+	+++
„ cooked ...	+	+	+
Pulses, germinated ...	+	++	++
Cereals, germinated ...	+	++	++
Liver	++	++	+
Milk, cows', whole, raw	++	+	+
„ „ „ dried	++	+	−+*
„ „ „ boiled	++	+	−+
„ „ condensed, sweetened	+	+	+
Meat, lean	+	+	+
Carrots	+	+	+
Potatoes	+	+	+

* Signifies less than +.

Common Foodstuffs Rich in Fat Soluble A (Anti-rachitic).

Butter	+++	Heart	++
Cod liver oil	+++	Herring	++
Cream	++	Mackerel	++
Egg yolk	++	Salmon	++
Wheat germ	++	Cabbage, raw	++
Beef or mutton fat	++	Lettuce	++
Fish oil	++	Spinach	++
Liver	++	Carrots	+

Foodstuffs Rich in Water Soluble B (Anti-neuritic).

Eggs, fresh and dried	+++	Fish roe	++
Wheat germ	+++	Linseed and millet	++
Dried yeast	+++	Dried pulses	++
Yeast extract and autolysed, " Marmite "	+++	Germinated pulses	++
Liver, brain, sweetbread	++	Nuts	++

Common Foodstuffs Rich in Water Soluble C (Anti-scorbutic).

Cabbage, raw	++++	Tomatoes, canned	++
Lemon juice, fresh	++++	Germinated pulses	++
Orange juice, fresh	++++	Cabbage cooked ½ hr. at 100° C.	++
Tomatoes	++++	Lemon juice, preserved	++
Runner beans, raw pods	+++	Lime juice, fresh	++
Swede juice, fresh	+++	Carrot	+
Raspberries, fresh	++	Onion	+
Cloudberries, fresh	++	Rhubarb	+
Salads, cresses, etc.	++	Apples	−+
Cooked potatoes	+	Bananas	−+
Lean meat	−+	Grapes	−+
Raw milk	−+		
Beetroot	−+		

Med. Res. Committee Report.

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